



RVS QUALITY CERTIFICATIONS PVT.LTD.

An ISO 9001, 14001, 45001, 17024 Certified Company



H.NO: 8-3-214/2/B/5/6, Srinivasa Nagar West, Ameerpet, Hyderabad, Telangana-38



9701113344, 9100361400



www.rvsglobe.org



info@rvsglobe.com



ABOUT RVS :

RVS globe was established with a mission to provide excellent services to customers by providing quality services of high standards in the following categories

- ✔ **NDT (Conventional & Advanced) Services**
- ✔ **Condition Monitoring & RLA study**
- ✔ **Third-party Inspection services**
- ✔ **Specialized Services**

Headquarter in Hyderabad, RVS Globe is an **NABL & ISO 17020, ISO 17025** Accredited independent Inspection Testing and Quality Assurance Laboratory serving 500+ customers globally. Established in 2010, RVS Globe has a trusted legacy with a strong presence in India and Globally in countries like Saudi Arabia, Kuwait and UAE, Dubai, Qatar, Singapore.

RVS globe aims to innovate in a way that minimizes the gap between their offerings and their client needs.

RVS Globe provides services that include Mechanical Testing, Positive Material Identification (PMI), Non Destructive Testing) in Advanced NDT Methods (PAUT, Eddy current Inspection, Thermography, vibration testing,)

The multidisciplinary certified and experienced team of professionals at RVS globe include metallurgical, mechanical, Civil engineers, materials Scientists, NDT inspectors and Third-party inspectors who are skilled to meet rigorous international standards in the testing field, to serve the industry as per Industry 4.0 standards

QUALITY POLICY

We will strive to achieve growth and leading position in the market by:

- ✔ Supplying consistent, impartial, timely service to our valued customers
- ✔ Timely improvement and implementation of advancement of techniques and equipment's.
- ✔ Acquiring knowledge and competence for complying with requirement of our valued customer
- ✔ Complying requirements & continually improve the effectiveness of quality management system

VISION

To assure safety for engineering structures & assets by reassuring engineering quality through our expertise and experience.

MISSION

To assure secure working environment for men and machines by reassuring quality of engineering assets through our expertise and experience



INDUSTRIES RELYING ON NDT FOR ASSET EVALUATIONS AND INSPECTIONS:



AVIATION
& AEROSPACE



TELECOM



AUTOMOTIVE



MINING



OIL & GAS



PETRO
CHEMICALS



MANUFACTURING



CONSTRUCTION



POWER
GENERATION



RAIL AND
TRANSPORTATION



INFRASTRUCTURE



MARINE AND
SHIPBUILDING



IRRIGATION



RENEWABLE
ENERGY



STEEL



SOLAR POWER



MILITARY &
DEFENSE



PORTS

RVS GLOBE PROVIDE THE FOLLOWING RANGE OF SERVICES



1 ADVANCE NDT INSPECTION

- ✓ Phased Array Ultrasonic Flaw Detection Testing (PAUT)
- ✓ Eddy current Testing (Tube/Surface)
- ✓ Borescope Inspection/ Crawler Inspection services
- ✓ Positive Material Inspection (PMI)



2 CONVENTIONAL NDT INSPECTION

- ✓ Ultrasonic Flaw Detection Testing (U.T)
- ✓ Ultrasonic Thickness Testing-of Pressure Plant / Vessels (UTG)
- ✓ Visual inspection as a Competent Authority
- ✓ Magnetic Particle Inspection (M.P.I)
- ✓ Dye Penetration Test (DPT)



3 CONDITIONAL MONITORING INSPECTION SERVICES

- ✓ Vibration Testing (Condition Monitoring services)
- ✓ RLA (Remote Life Assessment) Inspections
- ✓ IR Thermography Testing
- ✓ Laser Shaft Alignment
- ✓ Borescope Inspection / Crawler Inspection services
- ✓ Ultrasonic Thickness Gauging Services





4 PAINTING INSPECTION

- ✓ Holiday Test
- ✓ Dry film thickness
- ✓ Salt spray Test
- ✓ Adhesive testing



5 WELDING INSPECTION

- ✓ WPS/PQR Document Preparation
- ✓ Welder Qualification & Training
- ✓ Welding consultation



5 SPECIALISED INSPECTION SERVICES

- ✓ Load Testing and & Statutory Competent Person Certification
- ✓ Calibration Services
- ✓ Drone & Robotic Inspection Services
- ✓ CBB Declared / Authorized Agency For RLA Inspection (NDT) Services For IBR Boilers
- ✓ Third Party Inspection Services



ADVANCED NDT INSPECTION

1. PHASED ARRAY ULTRASONIC FLAW DETECTION TESTING (PAUT) :

Phased Array Ultrasonic Testing (PAUT) is an advanced non destructive examination technique that utilizes a set of ultrasonic testing (UT) probes made up of numerous small elements, each of which is pulsed individually with computer calculated timing ("phasing"). When these elements are excited using different time delays, the beams can be steered at different angles, focused at different depths, or multiplexed over the length of a long array, creating the electronic movement of the beam. Phased array probes can be used manually in a free running mode scrubbing the surface of a component, attached to an encoder to record position, or mounted on a semi-automated or motorized scanner for optimum productivity. Using phased array probes in direct contact with the component, whether mounted on a hard wedge, a water delay line, or even inside a wheel probe, gives inspectors the ability to quickly scan large areas for corrosion, cracking, and other defects with high resolution. PAUT can be used to inspect almost any material where traditional UT methods have been utilized and is often used for weld inspections and crack detection



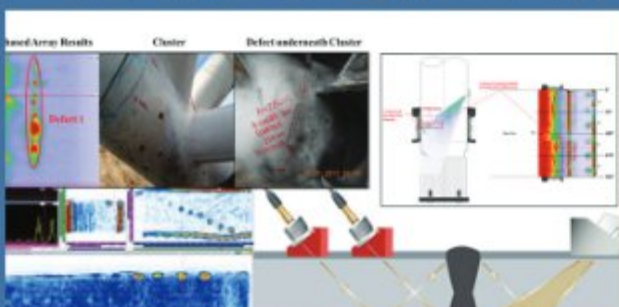
gives inspectors the ability to quickly scan large areas for corrosion, cracking, and other defects with high resolution. PAUT can be used to inspect almost any material where traditional UT methods have been utilized and is often used for weld inspections and crack detection

NOTABLE ADVANTAGES OF PAUT

- ✓ **COVERAGE** : By steering, focusing, and scanning the transducer beams, PAUT systems can be used to inspect large surface areas quickly with high resolution.
 - ✓ **SPEED** : Rapid coverage of larger surface areas means PAUT can typically be conducted more quickly than conventional UT.
 - ✓ **ACCURACY** : By emitting beams of multiple different angles sequentially, PAUT is able to create detailed and accurate cross-sections of an asset, thereby increasing the probability of detecting anomalies.
- REPEATABILITY** : PAUT can easily be used for repeat scans due to its high degree of accuracy and consistency.
- ✓ **FLEXIBILITY** : PAUT has proven to be an effective technique for inspecting more complex geometries such as elbows, bends, and nozzles. PAUT is also particularly useful in situations where there is limited access for mechanical scanning because it's able to sweep the beam without moving the probe.

INDUSTRY APPLICATIONS

- ✓ Weld inspections (pressure vessels, piping, and tubing)
- ✓ Inspecting composite materials
- ✓ Corrosion mapping
- ✓ Flaw sizing for remaining life calculations



2. EDDY CURRENT TESTING (TUBE/SURFACE)

Eddy current (ECT) equipment is often portable, immediate results are available and minimum part preparation is required. Probes also do not need to directly contact with the material, so its inspection capabilities extend to conductive materials with complex shapes and sizes.

A critical component of any eddy current examination is the ability to calibrate the unit based on reference standards manufactured from the same or very similar material as the test specimen. In the case of tubing inspection, an ASME tubing pit standard is required, and RVS teams are trained to comply with these regulations.

The eddy current technique encompasses several branches of inspections, including:

- ✓ Eddy Current (ECT)
- ✓ Pulsed Eddy Current (PEC)
- ✓ Pulsed Eddy Current Array (PECA)
- ✓ Surface Scan Eddy Current (SECT)
- ✓ IRIS Inspection Of Tubes
- ✓ MFL Inspection Of Tubes



BENEFITS :

Several benefits are derived from eddy current testing:

- ✓ It is suited to volumetric flaws such as corrosion, wear, and large porosities, as well as cracking.
- ✓ It can detect surface-breaking, near-surface, and far-surface defects.
- ✓ Eddy current testing can be used in applications other than flaw detection.
- ✓ Parts under test require only minimal preparation

EDDY CURRENT (EC) INSPECTION APPLICATIONS

Eddy current testing is most commonly used for tubing inspection in the power generation and oil and gas industries. It is also effective for crack detection (especially in the aerospace industry) and conductivity measurements for material identification and material sorting.

Other applications include :

- ✓ Tube, Wire, and Condenser Tube Testing
- ✓ Heat Exchanger & Reactor Tubing inspection
- ✓ Boiler & Heat exchanger RLA assessment



TUBING APPLICATIONS:

- ✓ Detection Capabilities According to Defect Type in Tubing
- ✓ Suitability According to Tubing Material

	Al	Al alloy	Al alloy	Al alloy	Al alloy	Al alloy	Al alloy	Al alloy	Al alloy	Al alloy	Al alloy	Al alloy	Al alloy	Al alloy	Al alloy	Al alloy	Al alloy	Al alloy	Al alloy
ID pitting	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OD pitting	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Axial cracking	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Circumferential cracking	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
ID corrosion	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OD corrosion	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
All tubular	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

✓ Suitable
 ✓ Acceptable, but limited
 ✓ Not suitable

	Al	Al alloy	Al alloy	Al alloy	Al alloy	Al alloy	Al alloy	Al alloy	Al alloy	Al alloy	Al alloy	Al alloy	Al alloy	Al alloy	Al alloy	Al alloy	Al alloy	Al alloy	Al alloy
ID pitting	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OD pitting	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Axial cracking	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Circumferential cracking	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
ID corrosion	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OD corrosion	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
All tubular	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

✓ Suitable
 ✓ Acceptable, but limited
 ✓ Not suitable

3. BOROSCOPE INSPECTION/CRAWLER INSPECTION SERVICES

The most advanced remote visual inspection and borescope inspection service technology is combined with experts and years of hands on experience to deliver comprehensive, professional on-site inspections. We provide immediate raw video and still image documentation and a detailed follow-up report of the borescope inspection conducted at your industrial facility.

Our expertise and equipment enable us to borescope and inspect the majority of areas in your plant. Our inspectors use state of the art borescopes, video scopes, video probes, pan tilt zoom cameras, pipe push cameras and inspection crawlers to inspect spaces from 6mm (236 in) to over 10m (30 Ft.) and lengths up to 100m (330 Ft.). Access to specialized equipment enables inspections of even smaller diameters and up to 1650' distances.

TURBINE INSPECTION :

Gas Turbine inspection services are offered for industrial customers throughout North America. RVSGlobe experienced inspectors have a variety of remote visual inspection equipment available such as video borescopes, video inspection cameras, video scopes and fiberscopes to inspect industrial Gas Turbines. Gas Turbine power plants rely on the expert services of RVS Globe

PIPE LINE INSPECTION :

Pipe inspection services are offered for industrial customers throughout India & Globally. RVS globe experienced inspectors have a variety of remote visual inspection equipment available such as robotic crawlers and long pipe inspection cameras, video scopes and cctv cameras to inspect industrial piping systems that are hundreds of feet long.

BOILER INSPECTION :

Advanced Inspection Technologies Offers Boiler Inspection Services Throughout global for Industrial Customers. 24-Hour Service Available. Experienced, Professional Inspectors are equipped with the most advanced Borescopes, Videoscopes and Boiler Inspection Cameras. The combination of experience, professionalism and the proper equipment allow Look RVI Inspectors to quickly complete all industrial Boiler inspections

TANK & PRESSURE VESSEL INSPECTION :

RVS Globe Offers Pressure Vessel and Tank Inspection Services Throughout Global Industrial Customers. 24/7 Service Available. Experienced, Professional Inspectors are equipped with the most advanced Borescopes, Videoscopes and Inspection Cameras. The combination of experience, professionalism and the proper equipment allow Look RVI Inspectors to quickly Complete all industrial Pressure Vessel and Tank inspections.



4. POSITIVE MATERIAL IDENTIFICATION

PMI Testing, also known as Positive Material Identification Testing, is the analysis of materials to determine the chemical composition of a metal or alloy at particular (usually multiple) steps of alloy manufacturing or in-process alloy installation. Knowing the exact composition and grade of an alloy enables suppliers, plant workers, and other parties in the chain of custody to match alloy specifications for specific properties such as heat resistance, corrosion resistance, durability, etc.

Having the right alloy in the right place is essential in industries such as the petroleum and chemical industries: The right alloy with the right properties is often all that stands between a safe, efficient operation and lost of time and revenue.

BENEFITS OF OUR PMI TESTING SERVICES AT A GLANCE :

With PMI testing services from RVS Globe, you can be sure of:

- ✔ Highly specific and accurate results, essential to good quality control.
- ✔ Assurance for verification of specialty metal parts.
- ✔ Field testing with laboratory quality.
- ✔ Quick results for product verification and sorting of product that may have been inadvertently mixed.
- ✔ A lead against the competition with a neutral audit seal.

WHY YOU NEED TO PMI TEST REGULARLY :

- ✔ Material Mix-up
- ✔ Piping or component failure
- ✔ Fire Hazard
- ✔ Toxicity
- ✔ Proximity to other forms of equipment



CONVENTIONAL NDT INSPECTION SERVICES

NON-DESTRUCTIVE TESTING (NDT) :-

Non-Destructive Testing (NDT) is a group of analysis techniques employing specific methods to evaluate the condition of plant and equipment without causing damage. NDT is carried out at all stages of the asset life cycle from the construction of plant and equipment through to regular testing during planned downtime or at set intervals throughout its asset life. Successful and consistent application of NDT depends heavily on personnel training, industry knowledge and experience.

WHY NDT ?

Employing NDT Techniques Assists to Ensure:

- ▶ **Cost Effective** : It doesn't damage the examined material and helps in locating the errors; thus, the company won't consume more resources or spend extra money.

- ▶ **Efficiency** : It's important to ensure safety, but it's also essential for this process to be quick. Non-Destructive Testing (NDT) isn't time-consuming, especially on the examination site.
- ▶ **Validity** : Non-Destructive Testing (NDT) guarantees the accuracy of its results.
- ▶ **Safety** : Most of the Non-Destructive Testing (NDT) methods are safe for people. Also, testing the components reduces the dangerous results that could happen and there are some standards and codes that demand the NDT to follow specific guidelines to ensure safety such as API, ASME, and ASTM Codes & standards

CONVENTIONAL NDT METHODS

- ✔ Ultrasonic Flaw Detection Testing (U.T)
- ✔ Ultrasonic Thickness Testing-of Pressure Plant / Vessels (UTG)
- ✔ Visual inspection as a Competent Authority
- ✔ Magnetic Particle Inspection (M.P.I)
- ✔ Dye Penetration Test (DPT)

1.ULTRASONIC FLAW DETECTION TESTING (UT):

International Inspection performs ultrasonic testing services to clients in a variety of fields. Also known by its abbreviation, UT, this non-destructive testing (NDT) method allows technicians to collect information on indications inside a test material by using sound waves. A handheld transducer sends sound waves through the surface of the subject while an ultrasonic gauge measures both the time they take to bounce back and the strength with which they return. The receiver converts these signals into an interpretable graph that our technicians can use to deduce several of the subject's subsurface characteristics, such as:

- ✔ Internal Defects
- ✔ Wall Loss Due to Corrosion
- ✔ Effectiveness of Adhesive Bonds
- ✔ Incomplete Penetration/Fusion in Welds

Our technicians are ASNT & PCN & ISO 9712 certified to conduct ultrasonic testing as per relevant Standards



2.MAGNETIC PARTICLE TESTING :

Magnetic particle examination (MPT) is a very popular, low-cost method to perform nondestructive examination (NDE) of ferromagnetic material. Ferromagnetic is defined in ASME Section V as "a term applied to materials that can be magnetized or strongly attracted by a magnetic field." MT is an NDE method that checks for surface discontinuities but can also reveal discontinuities slightly below the surface.

During MPI the iron particles are in either dry or wet form. In wet form they are either oil or water based.



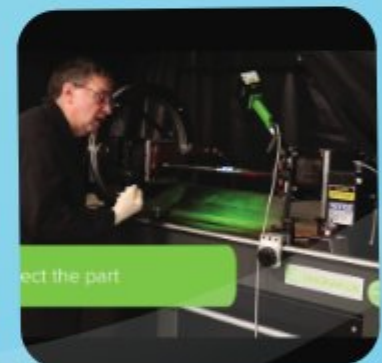
3. WET FLUORESCENT MAGNETIC TEST (WFMT)

this technique requires the use of UV light in a darkened environment. This is the most sensitive MPI technique and used extensively in the Power Generation and Petrochemical Industry during maintenance inspections. Electromagnet or Portable AC/DC Coil units are used for this inspection technique.

All inspections are performed by experienced ANS certified personnel to ASNT or PCN. Specifications governing Magnetic Particle Inspection include ASME V and EN17638.

Different Techniques as below :There are many different techniques and combinations of techniques of MT. The ASME Boiler and Pressure Vessel Code, Section V, Article 7, recognizes five different techniques of magnetization:

1. Prod technique
2. Longitudinal magnetization technique
3. Circular magnetization technique
4. Yoke technique
5. Multidirectional magnetization technique



4. LIQUID PENETRANT TESTING

Liquid penetrant testing, also known as dye penetrant inspection (DPI) or liquid penetrant inspection (LPI) is one of the most common and affordable solution and one of the oldest, if compared to non-destructive testing challenges.

The method leverages capillary action, i.e, the ability of a liquid to flow into narrow spaces without help, even in opposition to, external forces such as gravity—to detect surface-breaking defects.

The excess is removed and a developer is applied after applying the penetrant and letting it dwell for a certain period. From surface-breaking defects, the developer draws the penetrant where it's seeped, revealing their presence.



CONDITIONAL MONITORING INSPECTION SERVICES

- ✔ Vibration Testing (Condition Monitoring services)
- ✔ IR Thermography Testing
- ✔ RLA (Remote Life Assessment) Inspections
- ✔ Ultrasonic Thickness Gauging Services
- ✔ Borescope Inspection/ Crawler Inspection services



1.VIBRATION TESTING

Vibration analysis services are used to detect early precursors to machine failure, allowing machinery to be repaired or replaced before an expensive failure occurs.

Early detection of mechanical fatigue avoids breakdown. All rotating equipment vibrates to some degree, but as older bearings and components reach the end of their product life, they begin to vibrate more dramatically, and in distinct ways.

Ongoing monitoring of equipment allows these signs of wear and damage to be identified well before the damage becomes an expensive problem. Accurate monitoring of the health of your plant machinery decreases downtime and increases savings

This process is generically known as "Condition Monitoring". When used correctly, it can result in huge cost savings when compared to traditional maintenance methods. Traditional maintenance methods are predictive: components are replaced on a fixed schedule whether worn or not; and reactive maintenance: in which components are repaired only after they have broken down, Neither of these methods is ideal, although both are very common throughout the heavy industry sector, and both tend to incur much higher costs than those methods that use Vibration Analysis. Hence, Condition Monitoring & Vibration Analysis play an important and effective role in any Plant, irrespective of the size.

RVS GLOBE offer Condition Monitoring & Vibration Analysis Services, both in India and abroad. Our well trained and experienced personnel the Jobs by use of most advanced Instruments. Needs of many Industries spread across all Sectors are catered to by us, and the Clientele speaks for themselves on the quality and speed of the Services provided by us.

➤ DETECTION USING VIBRATION ANALYSIS :

- ✔ Misalignment
- ✔ Bearing wear
- ✔ Gear wear
- ✔ Lack of Lubrication

➤ BENEFITS OF VIBRATION TESTING

Here's why vibration testing is such an essential part of the research and development process for products of all kinds:



- ✔ Increases reliability and longevity
- ✔ Reduces cost to manufacture parts by eliminating over-designed parts/components (packaging, shipping, phones, etc.)
- ✔ Designed and built for their operational environment
- ✔ Regular vibration testing streamlines predictive maintenance procedures
- ✔ It helps your company remain compliant with important quality standards

**We provide vibration testing services for many industries including
Military, Aerospace, Automotive, Marine, and Railways**

➤ IMPORTANT STANDARDS FOR VIBRATION TESTING

Various industries and standards organizations have documented vibration testing regulations and standards to define acceptable results. Some noteworthy standards include:

- ✔ **MIL-STD-810** : Method 514 of this military standard – last updated in 2019 – defines acceptable vibration test methodology for rugged equipment.
- ✔ **ISTA Testing Programs** : Programs from the International Safe Transit Association (ISTA) are designed to ensure that products can withstand the random high-frequency stresses of transport.
- ✔ **ISO 10816** : This directive from the International Organization for Standardization (ISO) defines standards specific to vibration testing applications across all industries.

➤ APPLICATIONS FOR VIBRATION ANALYSIS

Vibration analysis is essential for products across all industries. Some examples of real industrial applications include:

- ✔ **Aerospace** : Rockets and probes experience extreme vibrational forces from takeoff to touchdown. For example, NASA's Space Launch System (SLS) must undergo extensive modal testing to determine the rocket's natural frequency before it can launch. This analysis helps controllers distinguish the rocket's natural frequency from external vibrations, which is crucial information for effective operation while in orbit.
- ✔ **Automotive** : Testing vehicle parts before installation helps manufacturers reduce or even eliminate the risk of defective systems.
- ✔ **Defense** : By utilizing vibration testing, defense manufacturers can ensure that equipment & weapons systems are safe to transport and effective in combat situations.
- ✔ **Electronics manufacturing** : Electronics manufacturers conduct vibration tests on prototypes to identify potential breakage and defects.
- ✔ **Equipment maintenance** : Vibration testing allows you to monitor the condition of industrial machinery and all its parts, including complex components like meshing gear teeth, combustion equipment, and rotating shafts.
- ✔ **Medical equipment manufacturing** : Hospital equipment failure is literally a matter of life and death. By testing products before release, manufacturers can prevent failures in critical life-saving equipment.

2. INFRARED THERMOGRAPHY TESTING :

Infrared thermography is a non-destructive and non-intrusive testing process employed as a predictive maintenance inspection technique to detect abnormal heat patterns in machines. A device known as a thermal imager is used in this method to detect radiation emitted from an object, converting it to a temperature and creating an image of the detected temperature distribution, known as a thermogram. The thermograms are utilized to analyse the thermal anomalies in different types of equipment. By leveraging the potential of infrared thermography inspection, RVS offers unrivalled Infrared Thermography Services in the All over India, Middle East & GCC across various industries.

Our well-trained and experienced team skillfully interprets thermograms to see what is invisible to the naked eye and detect hotspots, heat loss, leaks, insulation problems, and other abnormalities in machines.

➤ APPLICATIONS OF INFRARED THERMOGRAPHY TESTING AT RVS GLOBE :

RVS GLOBE utilizes thermal imaging to detect a variety of fault conditions before they become a catastrophic concern to people and property. The infrared thermography (IRT) inspections we offer are beneficial for various fields including, but not limited to:

- ✔ **Electrical Systems** : IRT assists in finding faulty electrical or overloaded circuits in various electrical systems.
- ✔ **Mechanical Systems** : Bearing failures, improper belt tension, misalignment of coupled equipment, abnormal warm motors, etc., in mechanical equipment can be detected by thermal imaging.
- ✔ **Fluid Systems** : Faults like line blockages, tank levels and pipe or fluid temperatures can be identified at the earliest stage.
- ✔ **Construction** : Building diagnostics leverages thermal imaging to identify insulation defects, moisture problems, plumbing flaws, air leakage, etc.
- ✔ **Low-Slope Roofs** : IR thermography aids in monitoring roof conditions and detecting wet roof insulation.

➤ BENEFITS OF INFRARED THERMOGRAPHY TESTING

Routine IR thermography inspections by RVS Globe expert personnel provide a myriad of advantages and the benefits of infrared thermography includes :

- ✔ The process is non-invasive, non-destructive, and cost-effective
- ✔ It can be used in condition monitoring
- ✔ Identifies problems in the equipment or device before they occur
- ✔ Prevents loss of production due to unexpected breakdowns
- ✔ Extends the useful life of the machine assets
- ✔ Reduced spare parts inventory base
- ✔ Enhances product quality & consistency



3.RLA INSPECTION (NDT) SERVICES FOR IBR BOILERS:

RESIDUAL / REMNANT LIFE ASSESSMENT (RLA) STUDIES

Indian Boiler Regulation 1950, the critical components which may get subjected to high temperature and pressure needs examination through Non Destructive Testing (NDT) timely as per the regulations. RVS GLOBE have a team of well-specialized experts who are deeply involved in carrying out RLA Studies to ensure better operations

RVS GLOBE is a well-known Remnant Life Assessment Organization, Accredited by Central Boilers Board.

We provide In-Service Inspection for RLA Studies to maintain the operating capacity for a longer period & ensuring Safety & Integrity of equipment of the Thermal Power Plants.

Inspection Services are offered for any Size, Type, Pressure, Temperature and Make of Boilers.

WHY RLA STUDY?

Routine IR thermography inspections by RVS Globe expert personnel provide a myriad of advantages and the benefits of infrared thermography includes :



- ✔ The high temperature operation of pressure parts is subjected to creep stress at elevated pressure
- ✔ The starting and stopping of the boiler unit results in fatigue stress
- ✔ The fuel burnt can cause corrosion in various areas in the boiler
- ✔ The water used for steam generation leaves deposits inside the tubes which increase the metal temperature leading to long term overheating
- ✔ Residual stress during manufacturing, the vibration dies to flow
- ✔ over the tube, mechanical vibrations, erosion due to the abrasive nature of the fuel, do occur in boiler
- ✔ Boiler is operated beyond the specified operating parameters
- ✔ All the above, individually, or combined lead to material degradation of different magnitude and will lead to failure

RLA APPROACH / METHODOLOGY :

- ✔ Collection of Back ground Data
- ✔ Understanding the Actual Degradation Mechanism
- ✔ Fatigue, Thermal fatigue, Thermo Mechanical Fatigue
- ✔ Thermal Aging
- ✔ Thorough Visual Examination by an Expert
- ✔ Dimensional measurement at Critical location
- ✔ Collection of Scale and Deposits Sample for Analysis
- ✔ Thickness Survey
- ✔ Internal oxide Scale Measurement at super heater tube and Re-heater tube
- ✔ WFMPI of Main weld joints of Headers and Steam drum
- ✔ In- Situ Metallography to determine thermal ageing and creep related problem from a RLA perspective
- ✔ In- situ hardness measurement with portable hardness tester
- ✔ Suggestion on repairing
- ✔ Calculation and judgment of remaining life based on analysis



4. ULTRASONIC THICKNESS GAUGING SERVICE

Measuring existing thickness through the cross section is used to determine loss of wall attributed to corrosion. This gives an indication of degradation level. Our Ultrasonic thick-

Inspection for corrosion can range from simple measurement to detailed corrosion mapping using C-scan images. It is important to monitor the structures and processing plants to maintain safety and reliability.

Ultrasonic thickness tests are used extensively on basic shapes and products of many materials, on precision machined parts, and to determine wall thinning in process equipment caused by corrosion and erosion



BOILER PIPES, TUBES, PRESSURE VESSELS CORROSION TESTING:

Ultrasonic thickness measurement inspection is used to determine the internal condition and remaining thickness of a vessel. Thickness measurements are collected in or out of service and by a qualified inspector. With advances in technology and reporting capabilities, more and more engineers recommend equipment which continuously records thicknesses as the scanning head moves over the inspection surface. Inspection results can be viewed in real time in the field or recalled for post-inspection analysis.

With the advent of Digital Ultrasonic thickness gauging, it is possible to measure the wall thickness using non destructive means. This not only eliminated the risk in sample selection, this helped to test all the boiler tubes in the lot with greater amount of accuracy. Above all, the speed of thickness inspections using Ultrasonic method tremendously improved the productivity.



AVOID LEAKAGES DUE TO LOSS OF TUBE THICKNESS:

Historical industrial accidents are identified to be caused due to poor maintenance practices. These pipes and tubes might have been installed long ago. Subjected to severe cyclic mechanical or thermal cycling, the structures are obviously becomes weak. Finally as the wall thickness is reduced to a point where the sections can't able to bear the load and thus fails suddenly

Major Industrial accidents such as Bhopal Gas leakage or the recent poisonous gas leakage from a process plant in Visakhapatnam in Andhra Pradesh questions the safety, integrity of our plants and structures. This also stress upon the need for periodic maintenance and monitoring of critical structures and pipelines for possible wall thickness reductions.



CHIMNEY WALL THICKNESS TESTING:

Monitoring your industrial chimney is imperative to its efficiency, performance, and safety. This includes having regular industrial chimney inspections by trained professionals. An inspection held every 6 to 12 months can ensure that your unit is working properly and at its peak performance. It will also help identify potential problems before they turn into expensive, unplanned outages or worse – structural failures.

Digital Ultrasonic thickness gauging shall be planned and performed to check the condition. This helps to assess the remaining life of the section under inspection. Usually wall thickness for lower sections near the ground is high when compared to the walls at greater heights. Continuous monitoring of wall thickness helps in replacing the corroded sections in time.

Measuring the wall thickness of these Chimneys is required using Digital Ultrasonic thickness gauging equipment. Accuracy of these equipment is quite impressive and can go up to 0.001mm or better. The accuracy of these gauges depends on

- ✔ Surface condition,
- ✔ Calibration procedure,
- ✔ Temperature of the component and
- ✔ Type of couplant used



PAINTING INSPECTION

COATING & CORROSION INSPECTION :

Coating inspection services or verifications are commonly requested quality assurance evaluations used when edifices and new constructions are undergoing replacement or repairs of interior or exterior coatings or liners.

Coating inspectors are accountable for the execution and the recording of simple non-destructive evaluations of liquid and non-liquid coatings applied in any form onto metal or other substrates.

RVS GLOBE Provides the Following Coating Inspection Services for our Clients:

Few painting inspection methods are given below :

- ✔ Surface Salt Contamination Test
- ✔ Humidity & Dew Point Temperature Test
- ✔ Dust Level Test
- ✔ Surface Profile Check
- ✔ Wet Film Thickness Check
- ✔ Dry Film Thickness Check
- ✔ Cross Hatch Adhesion Test
- ✔ Pull Of Adhesion Test
- ✔ Visual Test
- ✔ Salt Spray Test, etc



WELDING INSPECTION

Weld inspection is a process in which welds are examined for quality, strength, safety, and a number of other important factors.

In a weld inspection, trained specialists make a series of quality assurance checks before, during and after the welding process, ensuring that the fabrication is as safe and secure as possible.

Whether made of metal, thermoplastics or another material entirely, welds are used in many industries and environments across the world, and proper inspection and care is vital to keeping both workers and civilians safe.



WHAT DO WELDS DO ?

Welding is a fabrication process that uses extreme heat to fuse together metal and other materials into a joint.

In a weld, a base or parent metal is melted down and combined with a filler material in what is known as the weld pool. This pool is then cooled and attached to a second piece to create a joint that is stronger and sturdier than the original material on its own.

- ✔ Aerospace
- ✔ Amusement Parks
- ✔ Automobiles
- ✔ Construction
- ✔ Infrastructure
- ✔ Military
- ✔ Manufacturing
- ✔ Railroads
- ✔ Ship & Boat Building

➤ WELDING PROCEDURE SPECIFICATION (WPS) :

WPS is a written qualified welding procedure prepared to provide direction for making production welds to code requirements.

The key document is the Welding Procedure Specification (WPS) which details the welding variables to be used to ensure a welded joint will achieve the specified levels of weld quality and mechanical properties

The purpose of the document is to guide welders to the accepted procedures so that repeatable and trusted welding techniques are used. A WPS is developed for each material alloy and for each welding type used. Specific codes and/or engineering societies are often the driving force behind the development of a company's WPS. A WPS is supported by a Procedure Qualification Record (PQR or WPQR).

➤ PROCEDURE QUALIFICATION RECORD (PQR) :

A PQR is required when it is necessary to demonstrate that your company has the ability to produce welds possessing the correct mechanical and metallurgical properties.

A welding procedure must be qualified in accordance with the requirements of an appropriate welding procedure standard, such as ASME Sec IX, ISO 15609, AWS D1.1 as follows:

- ✔ Weld a test piece in accordance with the requirements of your specification. The joint set up, welding and visual examination of the completed weld should be witnessed by a certified welding inspector such as an AWS certified CWI or an Inspection Body. The details of the test such as the welding current, pre-heat etc., must be recorded during the test.
- ✔ Once the welding is complete the test piece must be subject to Destructive and Non-Destructive examination such as radiography and mechanical tests as defined by the welding procedure standard. This work must be carried out in a qualified laboratory but the Inspection Body may require witnessing the tests and viewing any radiographs.
- ✔ If the test is successful, RVS GLOBE completes the appropriate documents which the test body's surveyor signs and endorses.



SPECIALISED INSPECTION SERVICES

RVS GLOBE provides Load Testing and Certification, Load Testing Services in India and across the globe. We are Third Party Inspection agency approved under statutory provisions of Industrial Safety (Factories Act, 1948), Govt. of Telangana & Andhra Pradesh (Issuance of Form II) or under Provisions 2(d) of Dock Worker's (Safety, Health & Welfare) Regulations, 1990, Govt. of India. (Issuance of Form II, III, IV, VIII) for following services

LOAD TESTING AND STATUTORY COMPETENT PERSON CERTIFICATION

- ✓ Lifting Tools and Tackles
- Lifting Gear inspection
- ✓ Cargo Handling Units (Containers / Baskets)
- ✓ Cranes (Mobile, EOT, Tower)
- ✓ Spreader Beam / Lifting Beam
- ✓ IBR Boiler Inspections

CALIBRATION SERVICES

- ✓ Load Cell / Dynamometers
- ✓ Weighment
- ✓ Counter Weights / Dead Weights



DRONE & ROBOTIC INSPECTION SERVICES

These days, drone inspections are being performed in almost every industry that requires visual inspections as part of its maintenance procedures. By using a drone to collect visual data on the condition of an asset, drone inspections help inspectors avoid having to place themselves in dangerous situations.

Inspection drones are transforming manual inspection processes, allowing inspectors to speed up their collection of inspection data while removing slower manual steps that place them in danger.

For example, inspecting a cell tower manually may require climbing several stories in the air on a tower to take a close look at a guy-wire. And inspecting an industrial boiler manually may require climbing fifty feet or more into the air on scaffolding.

But inspection drones are changing all of this.

Now, a drone inspection service provider can fly an inspection drone up the cell tower, or throughout the boiler, capturing all the visual data the inspector needs to complete their inspection.

As a world leader in Robotic non-destructive testing (NDT) & RLA Study, RVS Globe delivers industrial-grade reliability and robustness to meet high quality standards.

Our portfolio includes maneuverable crawler robots with multiple NDT payload options, high quality point-tilt-zoom (PTZ) camera systems and 3DLOC software to geotag data during the inspection to a digital twin. Altogether providing a complete solution for automated confined space inspections.

With rental, purchase and subscription services available, we make it easy for owners and operators to embrace robotic inspection solutions increasing profitability of operations while boosting the safety of people and environment.



THIRD PARTY INSPECTION & SPECIALISED INDUSTRIAL INSPECTION SERVICES :

- ✔ RVS GLOBE is a truly global provider of technical inspection, verification, testing and conformity assessment for industrial markets. The core values of complete independence, transparency and integrity guide us in our mission to deliver unparalleled services at a uniform high-quality level to customers in India and Globally.
- ✔ The inspection engineers at RVS GLOBE are technically competent to meet customer expectations. Our Technical engineers have hands-on experience in manufacturing, site construction, oil & gas NDT and other domains. As a result, they are well aware of the engineering problems can significantly contribute in achieving the desired quality in project procurement and construction.
- ✔ Our services help the manufacturers to improve the integrity, quality, safety and efficiency of equipment through various types of inspections / services.
- ✔ Our inspection services are widely sought after by organizations in a wide range of sectors like Petroleum, Oil, Gas, Petrochemical, Chemical, Fertilizer, Thermal Power, Nuclear Power, EPC Projects, Material Manufacturing, Equipment Manufacturing, Pharma, Paper, Automobiles, Railways, Aerospace, Defense, IT, Health, Hospitality, Retail, Cement, Telecom, Data Centers, Infrastructure (Building, Railways , Bridges, Airport , Ports, Industrial Plants), , Metal Refining Industry (Steel , Copper , Aluminum).



NABL CONSULTANCY

As the number of laboratories has grown in several years, the government realized the necessity for some guidelines to oversee their operations. To regulate the activities of such labs, the National Accreditation Board for Testing and Calibration Laboratories was established under the Society Act. RVS is one of the reputed agencies providing NABL consultancy in Hyderabad

- ✔ Sample taken are properly handled.
- ✔ Quality standards should be among best practices.
- ✔ All the procedures and processes that labs use are right.
- ✔ Environment of the place where tests are being done is good.
- ✔ Calibration standards are complied

ADVANTAGES OF GETTING NABL ACCREDITATION

- ✔ it helps in getting more number of customers.
- ✔ Quality of test being performed improves.
- ✔ It reposes confidence among customers.
- ✔ Compliance of laws is assured by getting NABL certification in INDIA.
- ✔ Profitability of firm is increased

FOLLOWING ARE TYPES OF LABS THAT REQUIRE NABL CERTIFICATION IN INDIA.

- Mechanical labs
- Chemical labs
- Biological labs
- Electro-Technical Fluid Flow labs
- All electrical and electronic labs

WHY TO GET NABL REGISTRATION FROM US?

- We here do all type of NABL Consultation.
- Give 24/7 support
- Guarantee the lowest price for NABL Consultation
- 100% trusted services.



Our Clients



CONTACT US

RVS QUALITY CERTIFICATIONS PVT LTD

📍 Door No: 8-3-214/2/B/5. Krutunga Restaurant Lane, Srinivasa Colony West, Telangana, Hyderabad - 500038

🌐 www.rvsglobe.org / www.rvsglobe.com

✉ info@rvsglobe.com / support@rvsglobe.com

☎ +91 9701113344 / +91 9032111744 / +91 9100361400

