

Advanced Eddy Current Testing Services & Certification Trainings (ECT, MBET, RFT, IRIS)



Eddy Current Testing is a fastest NDT technique among all other NDT techniques. This is used for inspection of Heat Exchangers, boilers, condensers, Fin-Fan coolers tubing's in power plant, refineries, processing plants, Fertilizers and Oil & Gas sectors. For surface inspection, it is used almost in every Industry including Nuclear, Aviation and aerospace to ensure safety and integrity of the components.

EEPCON is providing ECT services and ASNT certification trainings since last 05 years to Nuclear, Power Plants, Refineries and Oil & gas sectors having satisfied clientele all across Pakistan.

Why EEPCON;

- * ASNT, NCNDT certified highly skilled and experienced engineers & technicians with 15-20 years hands-on experience.
- * Latest state of the art equipment's with customized solution of ECT probes as per customer requirement.
- * Commitment to meet client provided time lines of inspections.

Services offered in Eddy Current Testing

- Eddy current testing of tubing's of all sizes and dimension's.
 - Magnetic Biased Eddy Current Testing (MBET) of Ferromagnetic tubing's.
 - Remote Field Testing (RFT) of Heat Exchanger Tubing's.
 - Conductivity measurement and sorting of Materials.
 - Onsite & laboratory, ASNT Level I,II, III preparation and Certification trainings.
- ◆ ISO 9001:2015 QMS Certification
 - ◆ PEC C-3 Certification
 - ◆ SECP Certification
 - ◆ LCCI Certification
 - ◆ ASNT Certification

Conclusion:

Safe operation of your plant with reliable and economical solution and Expert advice.

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Civil Structure Assessment Services



EEPCON is pleased to offer value added services of civil structure inspection to its valued customers. It is imperative to test civil structure after the surface has hardened, eroded, cracked in order to determine if the structure is suitable and safe for its designed usage. Integrity assessment of the structure is determined by the compressive strength measurement, pulse sonic velocity test, petrographic analysis, and study on ETAB/ SAP 2000 software. The integrity testing ensures cost saving and fitness of the concrete structure for future usefulness. The testing is conducted without causing any damage or harm to the civil structure. The range of properties that can be assessed using integrity test is quite large and includes fundamental parameters like compressive strength, rebound hardness value, density, surface absorption, reinforcement location, size and depth of crack in concrete.

Civil Structure Assessment Techniques

Different NDT and Load testing Techniques are employed as per site conditions and customer requirements

- ◆ Ultrasonic Pulse Velocity (UPV) Test ASTM C 597
- ◆ Rebound Hammer Test ASTM C 805
- ◆ Petrographic Analysis ASTM C 865
- ◆ Pile Integrity Assessment
- ◆ Dynamic Cone Penetrometer Tests
- ◆ Dynamic Response (Pulse echo, Impact Echo)
- ◆ Ferro scanning/Rebar Locator
- ◆ Infrared Thermography for Buildings
- ◆ Ground Penetrating radar
- ◆ Acoustic Emission
- ◆ Radiometry

Scope of Assessment

- * **Strength Assessment**
- * **Durability Assessment**
- * **Integrity Assessment**

Conclusion *Civil structure assessment ensure:*

- * That safety standards are adhered for residential and Industrial units
- * Guarantees public safety
- * Highly beneficial to owners as well as to buyers who plan to make huge investments.

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Phased Array Ultrasonic Testing Time of Flight Diffraction



Eepcon deputed highly skilled and certified inspector to conduct on stream and off-stream NDE of equipment Being used in industries. With the increasing restrictions of industrial radiography, the need for alternate Inspection methods has increased. Modern techniques such as Phased Array Ultrasonic Testing (PAUT) and Time of Flight Diffraction (TOFD) offer the extra edge of improved performance, safety and overall cost Reduction. In comparison when PAUT and TOFD is performed, the quality of performance is superior to that performed with conventional radiography.

WHY PAUT

PAUT provides sharper detection capability for off-angle cracks and is capable of displaying multiple presentations simultaneously. It applies computer-controlled excitation to individual elements in a multi-element probe. By varying the timing of the excitation, the sound beam can be swept through a range of angles. The shape of the beam may also be Modified to a specific focal distance or spot.

Advantages over Radiography

- No safety barrication is required in conventional method thus eliminating all radiation protection measures.
- No health and safety hazards while using highly ionizing radiations.
- Higher reliable of examination than radiography
- Provides 100% coverage of welds with high scanning speed and reducing time
- Able to characterize and size a number of defects with two dimensional sizing
- Possible to deliver both hard and soft copies of results

Limitations

- Skilled operators are not easily available as the techniques are new.
- Tube wall thickness should be > 4.5 mm for the detection and characterization of defects accordance with the

Conclusion

PAUT / TOFD provides advantage in saving time and money along with reducing health and safety implication. In addition to this, it can detect all types of defects and characterize them in accordance with the acceptance criteria.

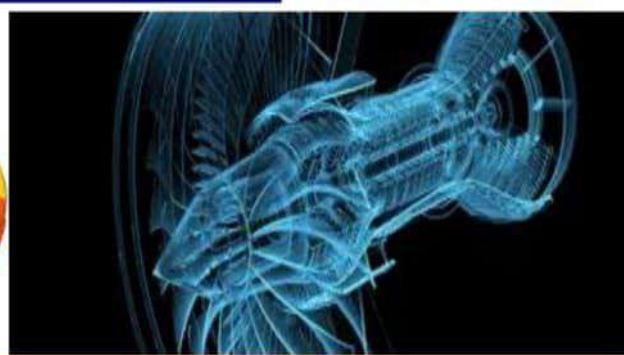
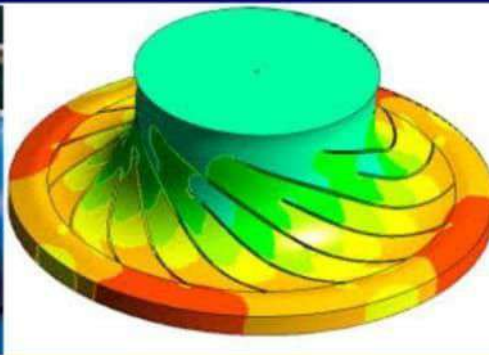
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EEPCON Rotary Services



Innovative - Economical - Reliable



EEPCON is a leading plant condition monitoring company and offers world -class condition monitoring and reliability centered maintenance (RCM) solution to the industry. We possess the advance diagnostic capability, skill and analytical concept to help industries for improving plant-reliability, reduce production loss and maintenance cost. We are specialized and highest Level certified people in rotating and reciprocating machinery.

Condition Monitoring Services

- ◆ Route based vibration analysis
- ◆ IR Thermography analysis
- ◆ Dynamic balancing
- ◆ Laser alignment
- ◆ Acoustic emission testing
- ◆ Steam traps inspection
- ◆ Valve inspection
- ◆ Air/Gas leak survey
- ◆ Electric corona testing
- ◆ Wind turbine vibration
- ◆ Motor current signature analysis (MCSA)

Turbo Machinery Analysis

- ◆ Orbit analysis
- ◆ Full & half spectrum analysis
- ◆ Time waveform analysis
- ◆ Waterfall/Cascade analysis
- ◆ Bode plot analysis
- ◆ Polar Plot Analysis
- ◆ Phase analysis
- ◆ Shaft enter line (SCL) analysis
- ◆ Campbell diagram analysis
- ◆ Rotor - Bearing balance response analysis
- ◆ Rotor - Bearing stability analysis
- ◆ Proximity probe gap voltage

Advance Vibration analysis and Solution

- ◆ Turbo rotor in-situ balancing
- ◆ Bump Test
- ◆ Modal analysis
- ◆ Impact test for generator and motor winding
- ◆ Operation deflection shape (ODS) analysis
- ◆ Finite element analysis (FEA)
- ◆ Piping vibration, pulsation, and stress analysis

Conclusion *"EEPCON Rotary services solution ensure"*

Safety, Reliability & Reduced Operation & Maintenance cost

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MEP Services (HVAC, Plumbing, Electrical)



- EEPCON Mechanical team deals procurements, supply, operations in HVAC System
- All type of mechanical, electrical, plumbing, water supply works as per client requirements.
- Designing, planning, implementation & execution the job keeping all standards and safety rules with qualified Engineers and trained technicians.
- Successfully completion and working in supply & installation of HVAC equipment's with Top notch clients like HUBCO, Sindh Engro Coal Mining Company (SEMC) and Public sector organizations.

HVAC Works

- Supply, Installation & maintenance work for all type of HVAC systems covering domestic, semi-commercial and commercial I,e centralized, VRF, and unitary systems
- All type of duct works I,e G.I,P.I duct for supply, ventilation exhaust and fresh air section with fixing of filters, louvers, disc valves, dampers (volume control, fire, motorized), Grills(RAG, SAG), Registers and diffusers (RAD, SAD)
- Installation of chilled water, copper piping as per system requirements to be installed
- Maintenance work for chillers I,e condenser, evaporator and compressor repairing and domestic units(splits etc.)



Plumbing Work

- Assembling pipe sections, tubing and fittings, using couplings, clamps, screws, bolts, cement, plastic solvent, caulking, or soldering, brazing and welding equipment
- Modifies length of pipes, fixtures, and other plumbing materials as needed for a building

Automation Works

- HVAC and lightening control systems using PLC and SCADA
- Automated building system via PLC system I,e BMS, BAS
- Automate Remote control HVAC system for both centralized and VRF systems
- Management of switching, power quality, and distribution at control center for HVAC system



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Remote Visual Inspection Services



While vision may be the most acute of human senses, there is a limit to what our eyes can see. Unless a material is transparent like glass, we cannot see what lies behind it. In the field of nondestructive examination (NDE), there are situations where it is useful to look deep inside engines, gas turbines, machinery, behind walls, inside pipes and tanks, and into similar places where access is limited. Remote visual inspection (RVI) is a nondestructive technique that permits a user to visually inspect an area that has no direct visual access. In RVI, a slim and often flexible viewing device, commonly referred to as a "scope," is inserted into the inspection area through a small opening providing an image for the operator to examine. Like all NDE tools, RVI allows an inspector to discover hidden defects before they cause major problems.

Applications Include:

- Gas turbine and steam turbine periodic, remaining life, predictive Assessment.
- Electrical generators & transformers
- Sanitary piping & tubing
- Boiler water piping & components
- Nuclear reactor heads, reactor coolant pumps, demineralizers, containment structure, & other components
- Piping systems such as service water, fire protection, oil, coal handling,

Scope of Assessment

- * *Life Assessment*
- * *Periodic Assessment*
- * *Integrity Assessment*
- * *Failure Assessment*
- * *Predictive Assessment*

Conclusion *Remote Visual inspection ensure:*

- * RVI delivers the tremendous potential of true video-based technology to a much wider range of customers.
- * Highly beneficial for all types of Condition monitoring..

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