

**India Non-Destructive Testing Market Assessment, By Technique [Ultrasonic Testing, Visual Testing, Magnetic Particle, Liquid Penetration, Eddy-Current, Radiographic, Acoustic Emission, Others], By Service [Inspection Services, Equipment Rental Services, Calibration Services, Training Services], By End-use Industry [Manufacturing, Oil and Gas, Power Generation, Chemicals, Healthcare Equipment, Aerospace, Automotive, Others], By Region, Opportunities, and Forecast, FY2019-FY2033F**

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**Report description:**

India non-destructive testing market is projected to witness a CAGR of 6.93% during the forecast period FY2026-FY2033, growing from USD 659.38 million in FY2025 to USD 1,127.02 million in FY2033. India non-destructive testing market is experiencing tremendous growth due to growing concerns over quality assurance and safety-related factors, in the manufacturing sector, infrastructure, and energy. As urbanization accelerates and infrastructure projects multiply, the demand for innovative NDT solutions that ensure structural integrity without compromising materials is rising.

Advanced ultrasonic testing and nanotechnologies are new technologies leveraged to enhance the efficiency and accuracy of NDT applications. In addition to the early detection of defects, these novelties help cut down inspection processes, reducing further operating costs while increasing productivity. The manufacturing sector appears to be a major growth contributor in the market, as the country is focused on strengthening its industrial base through efforts to improve domestic production capabilities. Additionally, the infrastructure sector, which is expanding, requires stringent testing processes to ensure the durability and safety of structures. On the regional aspect, western India dominates the NDT market due to its concentration of the manufacturing and

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energy sectors, especially in Maharashtra and Gujarat. Southern India is experiencing significant demand driven by its expanding railway networks, growing automotive industries, and upsurge in aerospace demand.

For instance, in August 2024, Phased Array Ultrasonic Testing (PAUT) of weld joints was inaugurated at Universal Rail Mill, Bhilai Steel Plant. Need of Indian Railways to commence PAUT on weld joints had been met with the commissioning of this test in Bhilai Steel Plant. This new method of phased array ultrasonic test is applied to detect and view the weld joint defects. This cutting-edge technology employs several ultrasonic elements throughout the scan and electronic time delays to form beams through constructive interference.

#### Growing Testing for Infrastructure Drives the Market

Rapid infrastructure development is a major driver for the non-destructive testing (NDT) market. As cities expand and bolster the demand for infrastructure, there is a growing requirement for more stringent inspection methods to ensure safety and structural integrity. Governments and private sectors are increasingly investing in critical infrastructure projects, which require advanced NDT techniques to evaluate materials and detect potential defects without causing damage. This trend is highly evident in areas such as railways, transportation, energy, and public works, where maintaining high safety standards is a crucial factor. Reliance on NDT for the assessment of the condition of infrastructure supports compliance with regulatory requirements while enhancing operational efficiency, propelling market growth in the coming years.

For instance, in November 2023, Eastern Railway's Sealdah division introduced ultrasonic flaw detection testing (USFD) to bolster rail infrastructure safety and reliability. This state-of-the-art technology represents a significant leap forward in the ongoing commitment to ensuring the utmost safety of railway operations within the rail network. The USFD is a sophisticated inspection tool designed to identify and assess flaws and defects in rails, ensuring early detection and preventive maintenance. The USFD testing is carried out in the Sealdah Division regularly according to the guidelines of USFD manuals and considering the frequency of USFD testing of rails, welds, points crossings, etc.

#### Innovations Drive the Non-Destructive Testing Market

Innovation in Non-Destructive Testing drives the non-destructive testing market in India, providing enhanced safety and efficiency across diverse industries, as the adoption of modern techniques like digital radiography, AI-driven data analysis, advanced ultrasonic testing, and robotics revolutionizes traditional inspection methods with improved accuracy and faster inspection times. Demand for innovation in non-destructive testing methods is bringing excellence in manufacturing, resulting in the demand for innovative non-destructive testing methods to grow and meet global standards and boost industrial competitiveness. Institutions are innovating and manufacturing tech-savvy tools and machines that are cost-effective and accurate, and proper maintenance strategies are optimized, expanding the non-destructive testing market in the country.

For instance, in March 2024, Indian Institutes of Technology (IIT) Kharagpur highlighted its success in artificial intelligence, specifically with two cutting-edge projects related to AI-based non-destructive testing for weld flaw analysis. The first, 'iWeld' (an AI-enabled NDT software) is a ground-breaking solution designed for Garden Reach Shipbuilders & Engineers (GRSE) Kolkata, Ministry of Defence. iWeld is meant to detect, locate and categorize various weld faults like blowhole, wormhole, porosity, lack of fusion, and inclusion from radiography images with great precision.

#### Manufacturing Segment Leads the Market

The manufacturing segment is leading India non-destructive testing market, as the increasing volume of manufacturing activities requires stringent quality assurance and safety measures. By conducting thorough inspections, manufacturers can detect defects early on, preventing them from reaching the market. Non-destructive testing inspection enables them to identify internal and surface defects, such as cracks, voids, corrosion, and discontinuities, without causing any harm to the inspected items. This non-destructive nature of non-destructive testing inspection boosts the demand in the manufacturing industry, as it allows for continuous quality assurance without depreciating the quality of the products thus making the manufacturing sector a significant growth driver for the market.

For instance, in Jun 2023, TCR Engineering Services Pvt. Ltd. revealed expansion plans, targeting initial public offering (IPO) by 2025. TCR Engineering Services Pvt. Ltd. will extend its materials testing and non-destructive testing activities in India. Company will provide different materials testing services at the new facility, including mechanical testing, chemical analysis, and metallurgical testing. Company recently opened a material testing and non-destructive testing facility in Odisha.

#### West and Central Region Dominates the Market

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The west and central region of India is leading India non-destructive testing market mainly because of its strong industrial base and massive manufacturing activities. Maharashtra and Gujarat are the hubs of the manufacturing sector accompanying various industries demanding quality assurance and safety measures. The concentration of automotive, aerospace, and energy sectors in this region propels the demand for advanced non-destructive testing solutions and technologies. As the government is investing in projects for infrastructure, the urgency to adopt proper inspection techniques is observed, resulting in numerous tenders being issued for providing non-destructive testing services.

For instance, in December 2024, a tender was issued for non-destructive testing works of the tank in connection with the fabrication, erection, testing, and commissioning of mild steel vertical storage tanks including tank foundation and allied works at the JNPT terminal, Navi Mumbai, Maharashtra.

Future Market Scenario (FY2026 - FY2033F)

-□The future of the non-destructive testing market in India will be heavily influenced by continuous technological innovations, including the integration of artificial intelligence and machine learning, which will enhance data analysis and improve defect detection accuracy.

-□As safety regulations become increasingly stringent across various industries, the demand for non-destructive testing will rise, compelling organizations to adopt comprehensive testing protocols to ensure compliance and mitigate risks associated with operational failures.

-□The ongoing focus on infrastructure development, particularly in transportation and energy sectors, will drive significant growth in the non-destructive testing market, as regular inspections become essential to maintain structural integrity and safety standards.

-□The non-destructive testing market is likely to witness increased consolidation through mergers and acquisitions, as companies seek to enhance their service offerings and expand their geographical reach, thereby creating a more competitive landscape with a focus on innovation and efficiency.

Key Players Landscape and Outlook

The competitive landscape of the non-destructive testing market in India is characterized by a diverse array of players, ranging from established multinational corporations to emerging local firms. Key companies are focusing on technological advancements and innovative testing solutions to enhance their service offerings and maintain a competitive edge. Strategic partnerships, collaborations, and mergers are prevalent as firms seek to expand their geographic presence and diversify their product portfolios. The market is also witnessing a surge in investment towards research and development, particularly in advanced non-destructive testing techniques such as ultrasonic testing and drone inspections, which are becoming increasingly popular across various sectors including aerospace, oil and gas, and infrastructure. As regulatory standards tighten, companies are prioritizing compliance and quality assurance, further intensifying competition within the sector.

For instance, in May 2025, Blue Star Engineering & Electronics Limited, through its industrial solutions division, launched a customer experience centre (CEC) in Pune, Maharashtra. This innovative facility centralizes a wide array of quality control and testing solutions, including non-destructive testing, material testing, environmental chambers, and metrology, providing an interactive hub for Indian industries.

## Table of Contents:

- 1.□Project Scope and Definitions
- 2.□Research Methodology
- 3.□Impact of U.S. Tariffs
- 4.□Executive Summary
- 5.□Voice of Customers
  - 5.1.□Brand Awareness
  - 5.2.□Factors Considered in Purchase Decisions
    - 5.2.1.□Cost-Effectiveness
    - 5.2.2.□Quality, Certifications & Compliance
    - 5.2.3.□Technical Capability & Expertise of the Service Provider

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- 5.2.4. Accuracy and Reliability
- 5.3. Consideration of Regulations
- 6. India Non-Destructive Testing Market Outlook, FY2019-FY2033F
  - 6.1. Market Size Analysis & Forecast
    - 6.1.1. By Value
  - 6.2. Market Share Analysis & Forecast
    - 6.2.1. By Technique
      - 6.2.1.1. Ultrasonic Testing
      - 6.2.1.2. Visual Testing
      - 6.2.1.3. Magnetic Particle
      - 6.2.1.4. Liquid Penetration
      - 6.2.1.5. Eddy-Current
      - 6.2.1.6. Radiographic
      - 6.2.1.7. Acoustic Emission
      - 6.2.1.8. Others
    - 6.2.2. By Service
      - 6.2.2.1. Inspection Services
      - 6.2.2.2. Equipment Rental Services
      - 6.2.2.3. Calibration Services
      - 6.2.2.4. Training Services
    - 6.2.3. By End-use Industry
      - 6.2.3.1. Manufacturing
      - 6.2.3.2. Oil and Gas
      - 6.2.3.3. Power Generation
      - 6.2.3.4. Chemicals
      - 6.2.3.5. Healthcare Equipment
      - 6.2.3.6. Aerospace
      - 6.2.3.7. Automotive
      - 6.2.3.8. Others
    - 6.2.4. By Region
      - 6.2.4.1. North
      - 6.2.4.2. South
      - 6.2.4.3. East
      - 6.2.4.4. West and Central
    - 6.2.5. By Company Market Share Analysis (Top 5 Companies and Others - By Value, FY2025)
  - 6.3. Market Map Analysis, FY2025
    - 6.3.1. By Technique
    - 6.3.2. By Service
    - 6.3.3. By End-use Industry
    - 6.3.4. By Region
- 7. Value Chain Analysis
- 8. Porter's Five Forces Analysis
- 9. PESTLE Analysis
- 10. Market Dynamics
  - 10.1. Market Drivers
  - 10.2. Market Challenges
- 11. Market Trends and Developments

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- 12. Case Studies
- 13. Competitive Landscape
  - 13.1. Competition Matrix of Top 5 Market Leaders
  - 13.2. SWOT Analysis for Top 5 Players
  - 13.3. Key Players Landscape for Top 10 Market Players
    - 13.3.1. Industrial X-Ray & Allied Radiographers (I) Pvt. Ltd.
      - 13.3.1.1. Company Details
      - 13.3.1.2. Key Management Personnel
      - 13.3.1.3. Products and Services
      - 13.3.1.4. Financials (As Reported)
      - 13.3.1.5. Key Market Focus and Geographical Presence
      - 13.3.1.6. Recent Developments/Collaborations/Partnerships/Mergers and Acquisition
    - 13.3.2. Central India Non Destructive Testing Engineers Private Limited
    - 13.3.3. TCR Engineering Services Pvt. Ltd.
    - 13.3.4. Blue Star Engineering & Electronics Limited
    - 13.3.5. Bureau Veritas (India) Private Limited
    - 13.3.6. Sai Heatreaters & Non-Destructive Testing Pvt Ltd
    - 13.3.7. SGS India Pvt.Ltd.
    - 13.3.8. DEKRA India Private Limited
    - 13.3.9. NDTs India (P) Limited
    - 13.3.10. TUV India Pvt. Ltd.

\*Companies mentioned above DO NOT hold any order as per market share and can be changed as per information available during research work.

- 14. Strategic Recommendations
- 15. About Us and Disclaimer

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