HIacc®

Environmental Testing Laboratory

Beyboun Engineering & Services PVT LTD

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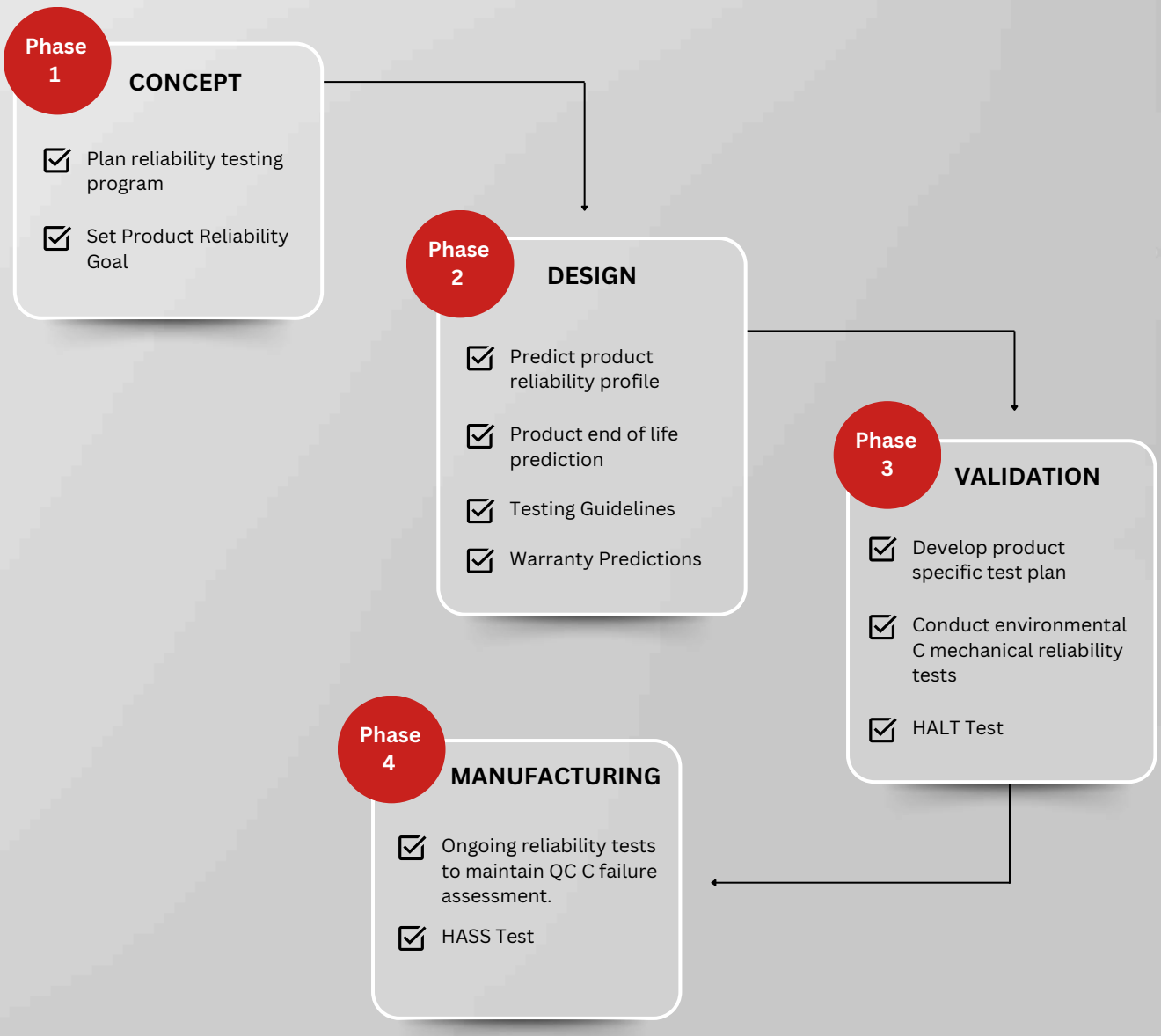
Environmental Simulation Testing

Productreliability testing can predict future performance throughout the entire life cycle of the product, component, or material under evaluation. By measuring relevant parameters and employing suitable analytical methods,it is also possible to identify potential failure modes.

Environmental testing simulates various combinations of temperature, humidity, and atmospheric pressure. This includes temperature testing, temperature and humidity testing, thermal cycling/shock testing, and altitude(low air pressure) testing. Outdoor and industrial environmental testing replicates various conditions, such as exposure to sand, dust, rain, water, chemicals, solar and UV radiation, and potential corrosion from liquids or gases.

HIACC Environmental Testing Lab

The HIACC Laboratory is well-equipped to fulfil thermal, vibration, and functional test requirements. External customerscan specify their own test criteria. The laboratory is capable of managing abroad spectrum of product validationneeds, including product robustness testing (HALT), electrical stress testing,and accelerated life testing. We collaborate with our customers throughout the concept, design, validation, and manufacturing phases to ensure the creation and production of highly reliable products.



TYPES OF TESTING

HALT/HASSTesting

HALT/HASS are testing methods used to identify and eliminate potential defects in products. HALT is performed during the design phase to find weaknesses by exposing products to extreme environmental conditions. HASS is conducted during production to screen out defective units by applying similar stresses. Both methods aim to improve product reliability and durability.

Thermal Shock Testing

Thermal shock testing evaluates a material's or product's resistance to extreme and rapid temperature changes. This test simulates conditions that can cause thermal expansion and contraction, potentially leading to material fatigue or failure. It ensures the durability and reliability of products in environments with fluctuating temperatures.

Humidity Testing

Humidity testing evaluates how materials and products respond to varying humidity levels. It simulates different environmental conditions to ensure that items can withstand moisture, preventing issues like corrosion, mold, and material degradation. This testing is crucial for assessing durability and performance in real-world settings.

Temperature Cycling

Thermal cycling testing involves repeatedly heating and cooling a material or product to assess its durability and performance under extreme temperature variations. This process helps identify potential failures or weaknesses by simulating real-world conditions that the item might encounter during its lifecycle.

Vibration Testing

Vibration testing involves assessing how products and components react to vibrational forces. This can include sine testing, which uses steady-state harmonic vibrations, shock testing, which applies sudden and intense force to simulate real-world impacts, and random testing, which subjects the item to a range of frequencies and amplitudes to mimic unpredictable conditions.

Shock/Drop/Bump Testing

Shock/Drop/Bump testing evaluates a product's durability by subjecting it to sudden impacts, drops, or repetitive bumping. This type of testing simulates real-world conditions where products might experience abrupt forces, ensuring they can withstand such stresses without damage. It is essential for assessing the robustness and reliability of various items, from electronics to packaging.

Dust, corrosion, and rain Testing

Dust, corrosion, and rain testing are essential procedures to evaluate the durability and resilience of materials and products. Dust testing assesses a product's ability to withstand dusty environments, corrosion testing checks its resistance to rust and degradation, and rain testing ensures it can handle exposure to water. These tests help ensure product reliability in various conditions.

EMI/EMC Testing

EMI/EMC testing ensures that electronic devices do not emit excessive EMI and can operate reliably in their EMC. This testing is crucial for verifying that products meet regulatory standards and function correctly without causing or suffering from interference, ensuring safety and performance in real-world conditions.

OUR FACILITIES

Environmental Test chamber

Temperature and Humidity Cyclic test chamber

Volume
1000L

Test Space Dimensions
1000x1000x1000mm (WxDxH)

Temperature Range
-40C to +180C

Temperature Change Rate
3C/minute

Humidity Range
10- 98%rH

Environmental Stress Screening Test Chamber

High Ramp Rate Test and Temperature cyclic Test

Volume
1000L

Test Space Dimensions
1000x1000x1000mm (WxDxH)

Temperature Range
-70C to +180C

Temperature Change Rate
5C/minute

Humidity Range
10- 98%rH

Thermal Shock Test Chamber

Volume
340L

Test Space Dimensions
700x700x700mm (WxDxH)

Temperature Range
Cold Zone: +50C to -70C
Hot Zone: +50C to +180C

Transfer Time
<10Sec

Basket Movement
Vertical (Motorised & Gear assembly)

Environmental Stress Screening Test Chamber

High Ramp Rate Test and Temperature cyclic Test

Volume
1000L

Test Space Dimensions
1000x1000x1000mm (WxDxH)

Temperature Range
-70C to +180C

Temperature Change Rate
12C/minute

Humidity Range
10- 98%rH

Vibration Test System

Sine Force (PK)
20 kN

Random Force (RMS)
20 kN

Shock Force (PK)
40 kN

Useable Frequency
5~3000 Hz

Max. Velocity
40 kN

Max. Acceleration
800 m/s2

Max. Static Payload
300 kg

Max. Displacement
76 mm

Slip Table Size
700*700 mm

Head Expander Size
600*600 mm

Other services

- ☑ Rain Test System
- ☑ Dust Test System
- ☑ Altitude Test System
- ☑ Combined Vibration Climatic Test System
- ☑ EMI/EMC
- ☑ Electrical Test and Measurement Test Systems Etc..

TEST STANDARD COMPLIANCE

Our Test Lab Catalog offers a comprehensive range of test standards meticulously curated to meet the diverse needs of our valued customers. Each standard is tailored to ensure compliance and reliability across various industries and applications.

- **MIL-STD** (Military Standards)
  Rigorous testing procedures established by the U.S. Department of Defense to evaluate the performance, durability, and environmental resilience of military equipment and systems.

- **ISTA** (International Safe Transit Association):
  Packaging performance tests designed to assess the ability of packages to withstand transportation hazards, ensuring product safety and integrity throughout the supply chain

- **IEC** (International Electrotechnical Commission):
  International standards governing the safety, performance, and compatibility of electrical and electronic components, systems, and equipment.

- **ASTM** (American Society for Testing and Materials):
  Widely recognized standards for materials testing, covering a broad spectrum of industries and applications to ensure product quality, safety, and performance.

- **ISO** (International Organization for Standardization):
  Globally accepted standards encompassing a wide range of disciplines, including quality management, environmental management, and product testing, to facilitate international trade and collaboration.

- **EN** (European Norm):
  European standards specifying requirements and test methods for products, materials, and systems across various industries, ensuring conformity and interoperability within the European Union.

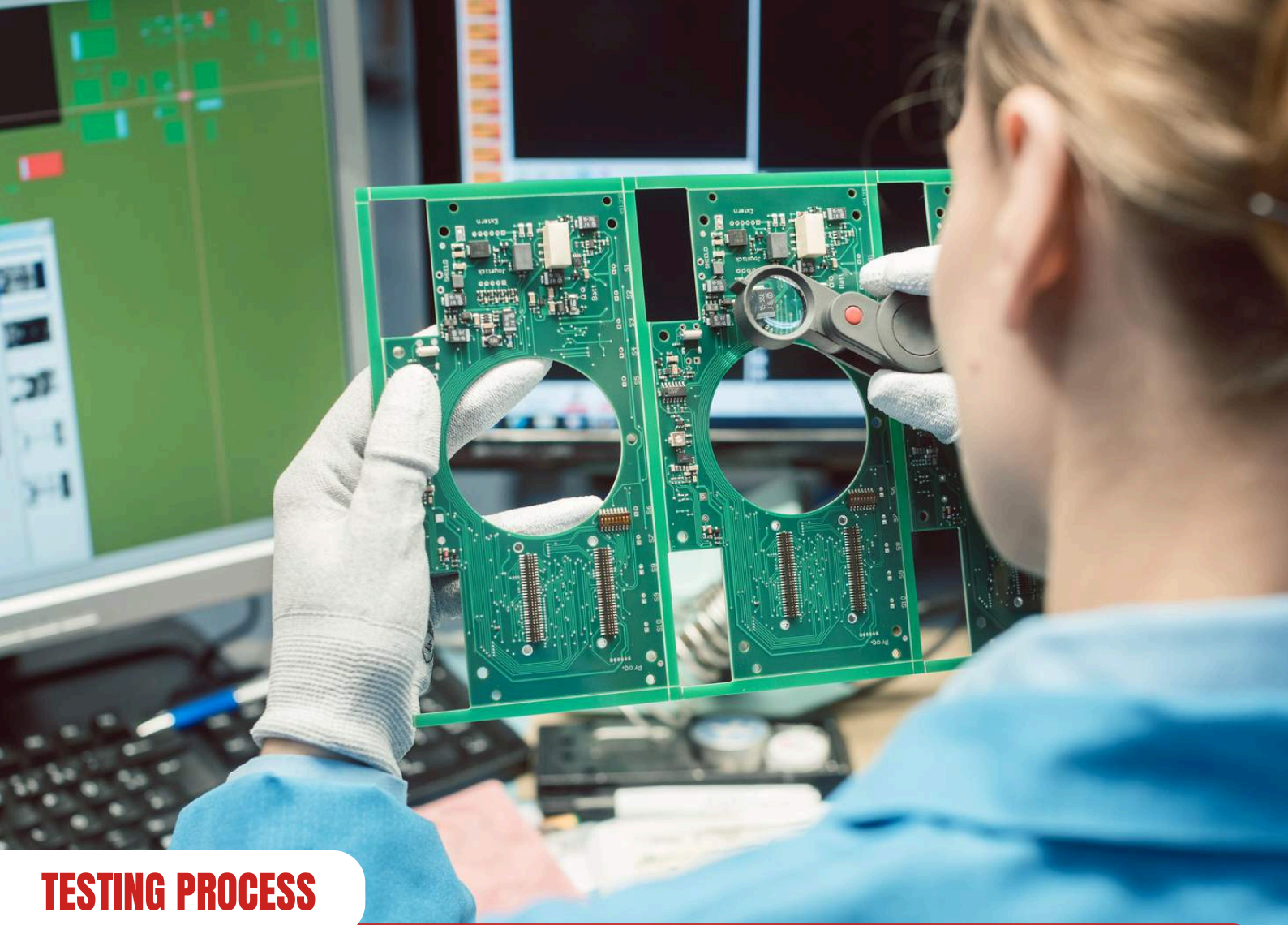
- **SAE** (Society of Automotive Engineers):
  Standards developed for the automotive industry to ensure the safety, performance, and compatibility of vehicles, components, and systems.

- **RTCA DO** (Radio Technical Commission for Aeronautics Designated):
  Standards for the design, development, and certification of airborne electronic systems, ensuring reliability, compatibility, and safety in aviation.

- **JSS** (Joint Services Specifications):
  Specifications established by the Indian Armed Forces to ensure the quality, reliability, and interoperability of defense equipment and systems.

- **JASO** (Japanese Automotive Standards Organization):
  Standards governing the design, construction, and performance of automotive components and systems to meet the stringent requirements of the Japanese automotive industry.

In addition to these established standards, we offer customized testing solutions tailored to the specific needs and requirements of our customers. Our expert team collaborates closely with clients to develop and implement specialized test protocols, ensuring comprehensive evaluation and validation of their products.



TESTING PROCESS

Defining Test Samples:

- Detailed documentation format for defining test samples, including product specifications, dimensions, materials, and any specific requirements.
- Sample submission forms with fields for client information, sample identification, testing specifications, and any special instructions.

Test Procedures:

- Standard operating procedures (SOPs) for each test, outlining step-by-step instructions for preparing, conducting, and concluding tests.
- Test method documents specifying the equipment, conditions, and parameters required for accurate testing.
- Checklists to ensure adherence to test protocols and quality standards.

Test Datasheets:

- Datasheets template capturing test results, including measurements, observations, and any deviations from expected outcomes.
- Data logging systems to record test parameters such as temperature, humidity, pressure, and time intervals.

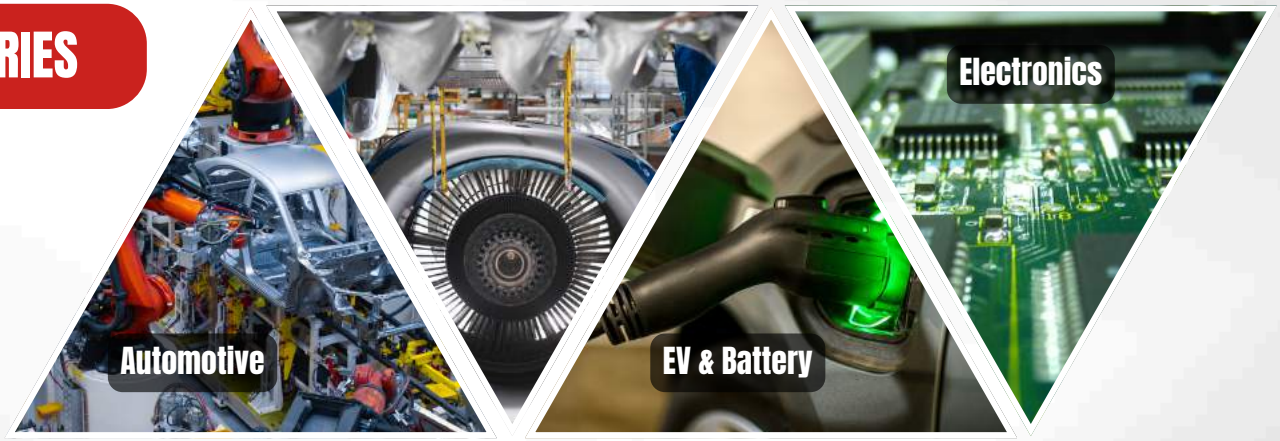
Photos of Specimens Under Test:

- Visual documentation of test specimens before, during, and after testing to monitor changes, damages, or failures.
- Image capture protocols ensuring consistent documentation of specimen conditions and test setups.

Post-Test Process:

- Reporting templates for summarizing test results, including data analysis, interpretations, and conclusions.
- Corrective action reports (CARs) in case of test failures or deviations, outlining remedial measures and recommendations.
- Archiving procedures for storing test records, including sample information, test procedures, datasheets, and photographic evidence for future reference and audit purposes.

OUR INDUSTRIES



Why Choose HIACC Testing Lab

We prioritize excellence in service delivery, ensuring our clients receive unparalleled benefits throughout their testing journey. Here's why you should consider partnering with us:

Real-Time Data Access

We offer real-time access to status updates, comprehensive test reports, raw data, high-resolution pictures, and reference materials. This transparent approach allows our clients to stay informed and make informed decisions promptly.

Live Streaming

As part of our commitment to innovation, we're exploring the possibility of integrating live streaming capabilities. This feature will enable clients to remotely monitor tests via live video feeds from both the test controller and test site cameras, significantly reducing travel costs while ensuring active engagement throughout the testing process.

Specimen Safety

Ensuring the safety and integrity of specimens is paramount in our testing procedures. Our state-of-the-art facilities and experienced technicians adhere to rigorous safety protocols, guaranteeing the protection of your valuable specimens throughout the testing process.

Accreditation

HIACC Testing Lab is proudly accredited with **NABL**, meeting the highest industry standards for quality and reliability. Our accreditation signifies our commitment to excellence and instills confidence in our clients, assuring them of the accuracy and validity of our test results.

Zero-Downtime

We understand the importance of time-sensitive projects and strive to minimize downtime to keep your projects on track. With efficient scheduling and proactive maintenance measures, we ensure uninterrupted testing services, allowing you to meet your deadlines with confidence.

Minimum Cost

Our cost-effective testing solutions are designed to maximize value without compromising quality. We offer competitive pricing structures tailored to suit your budgetary constraints, ensuring you receive the highest quality testing services at the most affordable rates.

HIACC RANGE OF PRODUCTS

Expand your testing horizons with our diverse range of complementary equipment, ensuring comprehensive, accurate, and reliable testing outcomes. your ultimate destination for environmental testing solutions, we provide cutting-edge products to elevate your testing capabilities to new heights.

Climatic Test Chamber

Temperature Test Chamber

Bench Top/Table Top Chamber

Thermal Shock Chamber

Altitude Chamber

Environmental Stress Screening Chamber

Combined Vibration Climatic Chamber(AGREE)

HALT/HASS Chamber

Walk-In/ Drive-In Chambers

DONGLING RANGE OF PRODUCTS

DONGLING

Expand your testing horizons with our diverse range of complementary equipment, ensuring comprehensive, accurate, and reliable testing outcomes. your ultimate destination for environmental testing solutions, we provide cutting-edge products to elevate your testing capabilities to new heights.

Electro-dynamic Vibration Test System (Air Cooled / Water Cooled Series)

Tri-Axis Electrodynamic Vibration Test System

Vertical Shock/Bump Tester

Slip Table

Vibration Controller

Incline Shock Tester

Servo Vertical Shock Tester

Drop Tester

Pneumatic Zero Drop Tester

HIACC®

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