



## UNDERSTANDING ISO 17025 CLAUSE 7.4 – HANDLING OF TEST AND CALIBRATION ITEMS

### Receipt and Registration – Establishing Identity from the Start

The moment a test or calibration item enters the laboratory, the quality journey begins. Clause 7.4 requires laboratories to implement strict controls at the **point of receipt**, because any uncertainty, mix-up or damage at this stage can compromise the entire testing process. Receipt and registration are not administrative tasks — they are technical safeguards that protect the integrity of every result.

A robust receipt process includes:

- **Immediate inspection** for damage (condition), contamination, incorrect packaging or compromised seals.
- **Verification of documentation**, ensuring the item matches the request, tender or contract.
- **Assignment of a unique identifier (such as a unique sample number)** that prevents duplication or confusion.
- **Recording of condition**, environmental factors and any anomalies observed.
- **Clear linkage** between the item, the client, the method and the work order.

If an item arrives in unsuitable condition, the laboratory must **document the issue**, notify the client and decide whether testing can proceed. This protects impartiality and ensures that results are not influenced by pre-existing defects.

Receipt and registration set the tone for everything that follows. When laboratories control this first step with discipline and precision, they build a foundation of traceability, confidence and scientific credibility.

### Storage and Protection – Preserving Integrity Until Testing

Once items are received and registered, the next responsibility is **protecting them**. Clause 7.4 requires laboratories to store items under conditions that prevent deterioration, contamination, loss or damage. Proper storage is not optional — it is essential to ensuring that the item tested is still representative of the item received.

Effective storage systems include:

- **Environmental controls** such as temperature, humidity, light exposure and ventilation.
- **Segregation of incompatible items** to prevent cross-contamination or mix-ups.
- **Secure access** to prevent tampering or unauthorised handling.
- **Clear labelling and location tracking**, ensuring items can be retrieved without confusion.
- **Monitoring systems** that detect deviations and trigger corrective action.



Storage conditions must be appropriate for the item type:

- Biological samples may require refrigeration or freezing.
- Mechanical components may require dry, dust-free environments.
- Calibration artefacts may require controlled temperature and protection from vibration.
- Environmental samples may require sealed containers and light protection.

When laboratories protect items with care and discipline, they preserve the validity of every downstream measurement. Storage is not a passive activity — it is an active quality function that safeguards integrity.

### Handling and Transport – Moving Items Without Compromise

Every movement of a test or calibration item — whether across the laboratory or between sites — introduces risk. Clause 7.4 requires laboratories to control handling and transport to prevent contamination, mix-ups, damage or deterioration. Movement must be intentional, documented and performed by authorised personnel.

Key elements of controlled handling include:

- **Using appropriate containers** that protect against contamination, moisture, vibration or breakage.
- **Maintaining orientation**, especially for items sensitive to position or settling.
- **Preventing cross-contamination** through clean tools, PPE and controlled environments.
- **Documenting internal transfers**, including time, location and responsible person.
- **Training personnel** to understand the risks associated with each item type.

Transport introduces additional considerations:

- **Temperature-controlled transport** for sensitive materials.
- **Shock-absorbing packaging** for fragile items.
- **Moisture retention** for moisture sensitive test
- **Security measures** to prevent tampering or loss.
- **Chain-of-custody continuity**, ensuring traceability is never broken.

Handling and transport are not logistical conveniences — they are quality-critical activities. When laboratories move items with precision and control, they protect the integrity of the entire testing process.

### Anomaly Detection and Reporting – Acting When Something Isn't Right

Not every item arrives in perfect condition. Clause 7.4 requires laboratories to identify, document and act on **any anomaly** that could affect the validity of results. This includes damage, contamination, incorrect labelling, missing documentation or conditions that fall outside the laboratory's acceptance criteria.



Common anomalies include:

- Broken seals or damaged containers
- Incorrect or missing labels
- Evidence of contamination or leakage
- Items outside required temperature ranges
- Items inconsistent with the request or contract

When an anomaly is detected, the laboratory must:

- **Document the issue** immediately and accurately
- **Quarantine the item** if necessary
- **Notify the client** and request clarification or instruction
- **Assess the impact** on validity, impartiality and safety
- **Decide whether testing can proceed**, be modified or must be rejected

Anomaly reporting protects the laboratory from producing invalid results and protects the client from receiving misleading information. It is a critical part of impartiality and risk management.

### **Return, Disposal and Retention – Closing the Chain Responsibly**

Clause 7.4 doesn't end when testing is complete. Laboratories must manage the **return, disposal or retention** of items in a controlled, traceable and responsible manner. This final stage closes the chain of custody and ensures that items are handled with the same care at the end as they were at the beginning.

Key responsibilities include:

- **Returning items** in a condition that prevents damage or contamination.
- **Documenting the return**, including date, recipient and method of transfer.
- **Disposing of items safely**, especially hazardous or regulated materials.
- **Retaining items** for defined periods when required by regulation, contract or internal policy.
- **Maintaining traceability**, ensuring records clearly show the item's final status.

Retention policies must specify:

- Duration
- Storage conditions
- Access controls
- Disposal procedures after retention ends

Closing the chain responsibly demonstrates professionalism, impartiality and respect for client property. It also ensures that the laboratory remains audit-ready and compliant with regulatory and contract expectations.

### **Protecting Integrity from Arrival to Release**

With **Clause 7.4**, one message stands firm: **results can only be trusted when the items themselves are protected throughout their entire journey**. Handling is not a background task — it is a core quality function that underpins every valid result.



### **Receipt and Registration – Identity Starts at the Door**

Quality begins the moment an item arrives. Inspection, verification and unique identification prevent mix-ups and ensure the laboratory understands the item's condition before testing. A disciplined start protects traceability.

### **Storage and Protection – Preserving Stability**

Items must be stored under conditions that prevent deterioration or contamination. Temperature, humidity, segregation and security all matter. Proper storage safeguards the validity of downstream measurements.

### **Handling and Transport – Movement Without Risk**

Every movement introduces potential error. Internal transfers and external transport must be controlled, documented and performed by authorised personnel. Packaging, orientation and chain-of-custody protect item integrity.

### **Anomaly Detection – Acting When Something Isn't Right**

Damaged, contaminated or incorrectly labelled items cannot be ignored. Clause 7.4 requires immediate documentation, client communication and impact assessment. This protects impartiality and prevents invalid results.

### **Return, Disposal & Retention – Closing the Chain**

After testing, items must be returned, disposed of or retained in a controlled and traceable manner. The chain of custody only ends when the item's final status is recorded.

**Accurate results begin with accurate handling.** Laboratories that master Clause 7.4 protect client property, uphold impartiality and strengthen confidence in every result they produce.

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