



MAGNUM CONSTRUCTION SERVICES INC.

CALIBRATION RECORDS FOR TESTING EQUIPMENT

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1. PURPOSE

To establish a controlled system for maintaining, verifying, and documenting the **calibration of all inspection, measuring, and test equipment (IMTE)** used on Magnum Construction Services Inc. projects.

The purpose is to ensure measurement accuracy, traceability to recognized national/international standards (e.g., NIST, ASTM), and conformance with **ISO 9001 §7.1.5, ISO 17025, and ASTM E74**.

2. SCOPE

This procedure applies to **all equipment** used for inspection, testing, and quality verification on project sites, fabrication yards, and laboratories, including but not limited to:

- Concrete compression and slump-test apparatus
 - Torque wrenches and load cells
 - Weighing scales, gauges, calipers, and micrometers
 - Thermometers, hygrometers, manometers, and pressure gauges
 - Electrical and welding meters, multimeters, clamp meters
 - Surveying instruments (levels, total stations, laser distance meters)
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3. REFERENCES

- ISO 9001:2015 — Clause 7.1.5 “Monitoring and Measuring Resources”
- ISO 17025 — Testing and Calibration Laboratories
- ASTM E74 — Standard Practice for Calibration of Force-Measuring Instruments
- ASTM C39, C231, C143 — Concrete Testing Standards
- MCS-QM-03 Inspection & Test Plan (ITP)
- MCS-QM-01 Corporate Quality Manual

4. RESPONSIBILITIES

Role	Responsibilities
Quality Manager	Establishes the calibration program, approves calibration vendors, reviews certificates, and maintains master register.
QA/QC Engineer	Ensures all IMTE in use are within valid calibration; removes out-of-calibration tools from service.
Equipment Custodian / Lab Technician	Maintains daily use logs, initiates calibration requests, and ensures labels are legible and intact.
Project Manager	Provides resources for calibration and ensures project-specific compliance.
Third-Party Calibration Agency	Performs calibration using certified standards traceable to NIST or equivalent.



5. CALIBRATION REQUIREMENTS

5.1 Identification & Tagging

- Each instrument shall have a **unique ID number**, tag, or barcode.
- Calibration label must show: **ID No., date calibrated, next due date, and initials of certifying technician.**
- Out-of-tolerance or expired tools must be **quarantined immediately.**

5.2 Calibration Intervals

Equipment Type	Interval	Method / Standard
Concrete Compression Machine	12 months	ASTM C39 / ASTM E4
Torque Wrench	6 months	ASTM E2624
Weighing Scale	12 months	ASTM E617
Thermometer / Hygrometer	12 months	ISO 17025 Lab Ref
Pressure Gauge	6 months	ANSI B40.1
Multimeter / Clamp Meter	12 months	NIST Traceable
Surveying Equipment	12 months	Manufacturer Procedure
Load Cell / Jack Gauge	6 months	ASTM E74

5.3 Calibration Sources

- Calibrations must be performed by **ISO 17025-accredited laboratories** or **manufacturer-authorized facilities.**
- Certificates must include **traceability statement, measurement uncertainty, and before/after readings.**
- On-site verification using reference standards is allowed only for interim checks.

5.4 Handling & Storage

- Instruments to be stored in **controlled environments** (clean, dry, temperature 15–30 °C).
- Protection against mechanical damage or vibration.
- Transportation cases labeled as “**Calibrated Equipment – Handle With Care.**”

6. RECORD CONTROL

Record Type	Form / Code	Retention Period	Storage Location
Calibration Certificate	MCS-QM-F07A	10 Years	Corporate QMS Server / Project Folder
Calibration Register	MCS-QM-F07B	Active + 5 Years	Quality Manager
Equipment Verification Log	MCS-QM-F07C	Duration of Project + 2 Years	Site QA/QC Office
Out-of-Tolerance Report	MCS-QM-F07D	10 Years	Corporate Quality Archive

7. NON-CONFORMANCE & CORRECTIVE ACTION

- If any instrument is found **out of tolerance**, an **NCR (Non-Conformance Report)** shall be raised.
 - Work inspected using the affected instrument must be **re-verified** where possible.
 - Root-cause and corrective actions shall be logged in the **Corrective Action Register (CAR)** per MCS-QM-17.
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8. AUDITS & VERIFICATION

- **Quarterly internal audits** verify validity of calibration and label accuracy.
- **Third-party audits** every 12 months confirm traceability and record integrity.



- Random spot checks may be conducted during project quality reviews.

9. REVISION & CONTROL

The Quality Department reviews this procedure **annually** or upon:

- Major equipment acquisitions,
- Revised calibration standards or intervals,
- Non-conformance findings or audit recommendations.

10. APPROVALS

Prepared By	QA/QC Engineer	Date
Reviewed By	Quality Manager	Date
Approved By	Director of Quality & Compliance	Date