

Your Company Name / Logo	WEIGHING SYSTEM CALIBRATION SOP	Doc no: SOP INST 019	Rev: 0
Department: Instrumentation	Standard operating procedure	Date:	Page: see footer

1. Purpose

To make weighing systems read mass correctly for batching, inventory and custody use.

2. Scope

Tank, hopper and platform weighing systems with strain gauge load cells.

3. References

- Weighing system manual
- Test weight certificates
- Mechanical drawings of vessel supports

4. Responsibilities

- Instrument technician: carries out the work and records results.
- Instrument engineer or supervisor: reviews and approves the records.
- Operations: grants the permit, isolates the process and returns the equipment to service.

5. Safety precautions

- Work only under a valid permit to work and follow the site isolation (lockout tagout) procedure.
- Wear the PPE required for the area: safety helmet, glasses, gloves and safety shoes as a minimum.
- In hazardous areas use certified or intrinsically safe test equipment, or obtain a gas free certificate and hot work permit.
- Inform the control room before starting, and before returning the instrument to service.
- Use certified lifting gear for test weights; keep clear of suspended loads.
- Isolate filling and discharge to prevent material movement.

6. Tools and equipment

- Certified test weights or a calibrated flow meter for substitution
- Weighing indicator or configuration software
- Spirit level and torch

7. Prerequisites

- Vessel empty or at known contents; process isolated.

8. Procedure

8.1 Mechanical checks

- 8.1.1 Check flexible connections, no bridging, mounts level and free, stays loose as designed.
- 8.1.2 Check cables and junction box.

8.2 Zero

- 8.2.1 With the empty vessel, set or record zero.

8.3 Load test

- 8.3.1 Apply known loads in steps up to near capacity, recording readings.
- 8.3.2 Remove loads in the same steps.
- 8.3.3 If weights are not enough, use build up with substitution.

8.4 Adjust and verify

- 8.4.1 Adjust span if needed and repeat.

8.4.2 Record results and return to service.

9. Acceptance criteria

- Error and hysteresis within tolerance (for example ± 0.1 % of capacity).
- Mechanical defects corrected and recorded.

10. Records

- Load cell calibration record (free template: instrumentationblog.in/downloads/templates/load-cell-calibration-record/)
- Calibration master list (free template: instrumentationblog.in/downloads/templates/calibration-master-list/)

11. Approval

	Prepared by	Reviewed by	Approved by
Name			
Signature			
Date			

This procedure is a generic template. Adapt it to your site permit system, the manufacturer instructions and your quality system before use.