

Cabinet Tilt Test Stability Standard Operating Procedure

1.0 Objective & Quality Standard

The objective of this procedure is to ensure that all assembled cabinets meet the required stability threshold to prevent accidental tip-over during use. The cabinet must not tilt beyond 10 degrees from vertical when a horizontal force of 50 N is applied at the top front edge. Any tilt exceeding 10 degrees constitutes a failure and requires corrective action.

2.0 Required Tools & Gauges

- Digital inclinometer or angle finder (accuracy $\pm 0.1^\circ$)
- Force gauge (0-100 N range, ± 1 N accuracy)
- Level (600 mm length, ± 0.5 mm/m accuracy)
- Test weight set (10 kg and 20 kg blocks)
- Non-marring push pad (to apply force without damaging finish)
- Measuring tape (3 m, ± 1 mm accuracy)

3.0 Safety & Material Handling

- Wear steel-toed safety boots and cut-resistant gloves during testing.
- Ensure the test area is clear of obstructions and personnel stand clear of the cabinet's tipping path.
- Use two operators for cabinets over 1800 mm height to control the test safely.
- Place the cabinet on a level, non-slip surface before testing.
- Handle test weights with proper lifting technique to avoid back strain.

4.0 Step-by-Step Procedure

1. Place the fully assembled cabinet on a level, rigid test platform. Verify the platform is level using the 600 mm level.
2. Load the cabinet with the maximum rated internal weight (e.g., 20 kg distributed evenly on shelves) to simulate real-world conditions.
3. Close all doors and drawers fully. Ensure no hardware protrudes that could affect stability.
4. Attach the digital inclinometer to the top center of the cabinet front face. Zero the inclinometer.
5. Position the force gauge with the non-marring push pad at the top front edge of the cabinet, centered horizontally.
6. Apply a steady horizontal force of 50 N perpendicular to the cabinet face, pushing away from the cabinet. Maintain the force for 5 seconds.
7. Read the maximum tilt angle displayed on the inclinometer during the force application. Record the value.
8. Release the force and allow the cabinet to return to rest. Wait 10 seconds for any settling.
9. Repeat steps 6-8 two more times for a total of three tests. Use the highest recorded tilt angle for pass/fail determination.

10. If the cabinet has doors or drawers on multiple sides, repeat the test from each side that has a door or drawer.

5.0 Verification & Defect Reporting

1. If the maximum tilt angle is 10 degrees or less, the cabinet passes the stability test. Mark the cabinet with a green QA sticker and proceed to packaging.
2. If the tilt angle exceeds 10 degrees, flag the cabinet as a failure. Red-tag the unit with a non-conformance label and move it to the rework area.
3. Inspect the cabinet for root causes: check for missing or loose anti-tip brackets, uneven leg levelers, or insufficient base weight. Adjust or rework as needed.
4. After rework, repeat the full tilt test procedure. If the cabinet still fails, escalate to the QA supervisor for engineering review.
5. Log all test results (pass/fail, tilt angle, side tested, operator ID) in the ShopDocs QA module for traceability and continuous improvement analysis.

Regulatory Disclaimer: This document is a generic quality assurance template. The end-user assumes all liability for validating all dimensional tolerances, testing procedures, and engineering specifications against actual production requirements before deployment.