
Wall Hung Cabinet Bracket Load Test

1.0 Objective & Quality Standard

The objective of this procedure is to verify that the wall hung cabinet bracket assembly can support the rated load without permanent deformation, cracking, or failure. The bracket must withstand a static load of 100 kg (220 lbs) applied evenly for 60 seconds with no visible deflection exceeding 2 mm at the front edge of the cabinet.

Acceptable tolerance: Maximum deflection of 2.0 mm measured from the back wall to the front bottom edge of the cabinet. No cracks, weld fractures, or permanent bending allowed.

2.0 Required Tools & Gauges

- Test weight set (calibrated steel plates or sandbags totaling 100 kg $\pm$ 0.5 kg)
- Digital caliper (0-150 mm range, 0.01 mm resolution)
- Straightedge (1 meter, precision ground)
- Feeler gauge set (0.5 mm to 3 mm)
- Marking pen (fine tip, non-permanent)
- Stopwatch or timer (phone acceptable)
- Safety glasses and steel-toed boots

3.0 Safety & Material Handling

- Wear safety glasses and steel-toed boots at all times during load testing.
- Use two-person lift for weights exceeding 25 kg to prevent back strain.
- Ensure the test fixture is bolted to a concrete floor or rated wall anchor before loading.
- Keep hands and feet clear of the load zone during the test.
- Inspect weights for cracks or damage before each use.

4.0 Step-by-Step Procedure

1. Mount the wall hung cabinet bracket assembly to the test fixture using the specified hardware. Torque all bolts to 25 Nm using a calibrated torque wrench.
2. Place a straightedge vertically against the back wall of the test fixture and mark the initial position of the cabinet's front bottom edge with a fine-tip pen.
3. Measure and record the initial distance from the back wall to the front bottom edge using a digital caliper. Record this as the baseline measurement.
4. Position the first 25 kg weight evenly across the cabinet's interior floor, centered left-to-right.
5. Add the remaining 75 kg in 25 kg increments, distributing each weight evenly. Ensure total load is 100 kg.
6. Start the stopwatch immediately after the final weight is placed. Allow the load to rest for 60 seconds.

7. After 60 seconds, measure the distance from the back wall to the front bottom edge again using the digital caliper. Subtract the baseline measurement to calculate deflection.
8. Visually inspect the bracket for any cracks, weld fractures, or permanent bending. Use a feeler gauge to check for gaps at weld joints if necessary.
9. Remove all weights in reverse order (25 kg at a time) using two-person lift.
10. Re-measure the distance from the back wall to the front bottom edge after unloading to check for permanent deformation. If the measurement exceeds baseline by more than 0.5 mm, the bracket has failed.

5.0 Verification & Defect Reporting

1. If deflection exceeds 2.0 mm during the 60-second load, or if any cracks or fractures are observed, immediately red-tag the bracket assembly with a non-conformance tag.
2. Record the failure details in the ShopDocs QA module: bracket serial number, test date, operator name, measured deflection, and type of failure (crack, weld fracture, permanent bend).
3. Segregate the failed bracket in the quarantine area and notify the production supervisor for root cause analysis.
4. If the bracket passes (deflection $\leq$ 2.0 mm, no permanent deformation), mark the bracket with a green pass sticker and record the test results in the QA log.
5. For any out-of-tolerance condition, initiate a corrective action request (CAR) and review the welding or assembly process for the bracket.

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.