

Drawer Soft Close Mechanism Engagement Speed Test

1.0 Objective & Quality Standard

The objective of this procedure is to verify that each drawer's soft-close mechanism engages consistently and provides smooth, silent deceleration throughout the final 50mm of travel. The mechanism must engage within 10mm of the drawer reaching the fully closed position and must bring the drawer to a complete stop without bounce-back or audible impact. Acceptable engagement speed is defined as the drawer moving at a velocity between 0.3 m/s and 0.6 m/s at the point of mechanism engagement, measured using a calibrated digital speed gauge. Any deviation outside this range, or any audible clicking, grinding, or hesitation, constitutes a defect.

2.0 Required Tools & Gauges

- Digital speed gauge (laser or contact type, accuracy ± 0.01 m/s)
- Metric ruler or tape measure (300mm minimum, 1mm increments)
- Marking tape or fine-tip marker
- Calibrated test weight (5 kg or as specified by slide manufacturer)
- Non-marring assembly mat
- ShopDocs QA tablet or clipboard with defect log form

3.0 Safety & Material Handling

- Wear clean, rubber-grip gloves to prevent oil transfer and fingerprints on drawer fronts and slides.
- Ensure the drawer is placed on a non-marring assembly mat to protect finished surfaces.
- Keep hands clear of the drawer path during the test to avoid pinch points.
- Do not force the drawer closed if resistance is felt; inspect for obstructions first.

4.0 Step-by-Step Procedure

1. Place the fully assembled drawer on a clean, level assembly mat with the soft-close slides fully extended.
2. Load the drawer with the calibrated test weight (5 kg) centered inside the drawer cavity to simulate typical use.
3. Using the metric ruler, measure and mark a line on the slide rail exactly 50mm from the fully closed position. This marks the engagement zone.
4. Position the digital speed gauge sensor so it is aimed at the front face of the drawer, aligned with the 50mm mark.
5. Slowly push the drawer closed by hand until the front face reaches the 50mm mark, then release the drawer completely.
6. Allow the drawer to coast naturally into the soft-close mechanism. Do not push or assist the drawer after release.
7. Record the speed reading displayed on the gauge at the exact moment the mechanism engages (indicated by a slight increase in resistance).

8. Observe and note whether the drawer stops smoothly without bounce-back, audible click, or grinding noise.
9. Repeat steps 5 through 8 two additional times for a total of three tests per drawer.
10. Calculate the average speed from the three readings. If the average falls outside 0.3–0.6 m/s, or if any single test shows bounce-back or noise, flag the drawer for adjustment.

5.0 Verification & Defect Reporting

1. If the average engagement speed is below 0.3 m/s, inspect the slide for binding, debris, or insufficient lubrication. Clean and lubricate per manufacturer specs, then retest.
2. If the average engagement speed exceeds 0.6 m/s, or if bounce-back occurs, adjust the soft-close damping mechanism per slide manufacturer instructions, then retest.
3. If any audible click, grinding, or hesitation is detected, remove the drawer and inspect the slide for damage or misalignment. Replace the slide if necessary.
4. Log all out-of-tolerance defects in the ShopDocs QA module, including the measured speed, observed symptoms, and corrective action taken.
5. Red-tag any drawer that fails after two adjustment attempts and route it to the rework station for further evaluation.

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.