Stain Rub Off Test After Drying – Quality Verification SOP

1.0 Maintenance Objective & Frequency

The objective of this procedure is to verify that the stain or coating applied to a manufactured part has fully cured and adheres properly to the substrate. This test is performed after the drying cycle to detect incomplete curing, contamination, or poor adhesion that could lead to premature failure in service. The test is performed on a per-batch basis or as specified by the quality plan, typically after each drying cycle or at the start of each production shift.

2.0 Lockout/Tagout (LOTO) & Safety

- No electrical or mechanical LOTO required for this test as it is a non-invasive quality check performed on finished parts.
- Ensure the part is cool to the touch before handling to avoid burns from residual heat.
- Wear nitrile gloves to prevent skin oils from contaminating the test area.
- Use safety glasses to protect against any loose particles or solvent splashes.
- Work in a well-ventilated area if any solvent or cleaning agent is used.

3.0 Required Tools, Parts & Lubricants

- Clean, lint-free white cotton cloth (approximately 4x4 inches)
- Isopropyl alcohol (99% concentration) in a squirt bottle
- Nitrile gloves (powder-free)
- Safety glasses
- Timer or stopwatch
- Test part representative of the production batch (fully dried and cooled)
- Digital thermometer (optional, for verifying part temperature)

4.0 Step-by-Step Maintenance Procedure

1. Confirm the part has completed the full drying cycle and has cooled to ambient temperature (below 30°C). Use a digital thermometer if necessary.
2. Put on nitrile gloves and safety glasses to prevent contamination and protect against solvent.
3. Select a flat, representative area on the coated surface that is free of visible defects or contamination.
4. Dampen a clean, lint-free white cotton cloth with isopropyl alcohol. The cloth should be moist but not dripping.
5. Firmly rub the dampened cloth back and forth across the test area for 10 seconds, applying moderate pressure (approximately 2-3 kg force). Use a consistent stroke length of about 100 mm.
6. Immediately inspect the cloth for any transfer of stain, colour, or residue. Also inspect the test area for any softening, marring, or removal of the coating.

7. If no colour transfer or coating damage is observed, the test passes. If any stain transfer, colour bleed, or coating softening is visible, the test fails.

8. Document the test result on the batch record or quality log, including the part ID, date, time, and technician initials.

9. If the test fails, quarantine the affected batch and notify the quality supervisor. Do not release the parts for further processing or shipping.

10. Clean the test area with a dry cloth to remove any residual alcohol. Dispose of used cloths and gloves in accordance with site waste procedures.

5.0 Verification & Return to Service

1. Verify that the test result has been recorded in the quality log or CMMS (ServiceGrid) with a clear pass/fail status.

2. If the test passed, the batch may proceed to the next operation or shipping. No further action required.

3. If the test failed, ensure the batch is physically segregated and tagged with a non-conformance label. Initiate a corrective action request in ServiceGrid.

4. Clean and store the test cloth and alcohol bottle in their designated locations. Return any tools to the maintenance cart.

5. Sign off on the PM work order or quality check task in ServiceGrid to close the activity.