

Additive Manufacturing (3D Printing) Quality Assurance Checklist 2026

Pre-Print Material Verification

Verification of filament, resin, or powder specifications, moisture content levels, batch consistency, and storage environment compliance.

Material Receipt Date

Material Batch/Lot Number

Material Type

- ☐ PLA
- ☐ ABS
- ☐ PETG
- ☐ TPU
- ☐ Nylon/PA
- ☐ Resin (SLA/DLP)
- ☐ Metal Powder

Moisture Content Percentage (%)

Enter a number...

Pre-Print Quality Checks Passed

- ☐ Visual Inspection for Contamination
- ☐ Expiration Date Verification
- ☐ Dryer/Oven Desiccation Completed
- ☐ Seal Integrity Check

Material Safety Data Sheet (MSDS) / Certificate of Analysis

 Upload File

Quality Inspector Approval

Digital File & Slicing Integrity

Review of STL/OBJ file accuracy, orientation optimization, support structure density, and sliced G-code parameters verification.

Slicing Software Version

- ☐ Cura
- ☐ PrusaSlicer
- ☐ GrabCAD Print
- ☐ PreForm
- ☐ Other

Validated G-Code / Sliced File

 **Upload File**

Slicing Parameters Verified

- ☐ Layer Height Optimization
- ☐ Infill Pattern & Density
- ☐ Support Structure Integrity
- ☐ Print Speed & Acceleration
- ☐ Retraction Settings

Estimated Print Duration (Hours)

Enter a number...

Print Orientation Notes

Write something...

Engineer/Technician Approval

Machine Calibration & Setup

Inspection of build plate leveling, nozzle/extruder temperature calibration, printer bed adhesion settings, and sensor functionality.

Calibration Date

Nozzle/Extruder Temperature (°C)

Build Plate Leveling Status

- ☐ Level
- ☐ Unlevel - Requires Adjustment

Pre-Print Sensor Check

- ☐ Level Sensor
- ☐ Thermistor
- ☐ Endstop/Limit Switch
- ☐ Filament Runout Sensor

Calibration Certificate/Log Upload

 Upload File

Technician Verification

Build Process Monitoring

Real-time monitoring of layer adhesion, thermal stability, extrusion consistency, and detection of mid-print anomalies or failures.

Print Start Timestamp

Enter date...

Expected Build Duration

Enter time...

Print Environment Temperature Status

- ☐ Stable
- ☐ Fluctuating
- ☐ Out of Tolerance

Layer Height Verification (mm)

Enter a number...

Observed Anomalies During Build

- ☐ Layer Shifting
- ☐ Stringing/Oozing
- ☐ Warping/Delamination
- ☐ Under-extrusion
- ☐ None/Normal

Detailed Deviation Notes

Write something...

Time-lapse Camera Snapshot/Logs

 Upload File

Technician Monitoring Verification

Post-Processing & Finishing Standards

Validation of support removal, surface sanding, chemical smoothing, curing (UV/Thermal), and cleaning of residual materials.

Applied Post-Processing Techniques

- ☐ Support Removal
- ☐ Chemical Smoothing
- ☐ UV Curing
- ☐ Thermal Annealing
- ☐ Sanding/Polishing
- ☐ Dyeing/Painting

Surface Roughness Observation

Write something...

Post-Processing Duration (Minutes)

Enter a number...

Post-Process Inspection Photos

 Upload File

Final Surface Finish Pass/Fail

- ☐ Pass
- ☐ Fail
- ☐ Requires Rework

Technician Validation

Dimensional Accuracy & Tolerance Inspection

Measurement of critical dimensions against CAD specifications using calipers, micrometers, or CMM to ensure part compliance.

Inspection Date

Measured Critical Dimension (mm)

Allowed Tolerance Deviation (mm)

Compliance Status

- ☐ Within Tolerance
- ☐ Out of Tolerance
- ☐ Marginal/Requires Review

Inspection Report / CMM Data Export

 Upload File

Discrepancy Notes & Corrective Actions

Write something...

Quality Inspector Approval

Structural Integrity & Mechanical Testing

Assessment of part strength, density, layer bonding quality, and performance of destructive/non-destructive testing (NDT) samples.

Tests Performed

- ☐ Tensile Strength Test
- ☐ Hardness Test
- ☐ Impact Resistance Test
- ☐ Creep Test
- ☐ Fatigue Testing

Measured Tensile Strength (MPa)

Enter a number...

Structural Integrity Status

- ☐ Pass
- ☐ Fail
- ☐ Conditional Pass

Defect Observations

Write something...

Test Report/Certificate Upload

 Upload File

Quality Inspector Approval

Post-Print Material Waste & Sustainability Audit

Evaluation of support waste volume, recyclability of failed prints, and adherence to 2026 sustainability and carbon footprint targets.

Audit Date

Enter date...

Total Weight of Support Material Removed (kg)

Enter a number...

Percentage of Failed Prints (Scrap Rate %)

Enter a number...

Waste Disposal Method

- ☐ Recycled/Re-extruded
- ☐ Landfill
- ☐ Chemical Processing
- ☐ Third-party Repurposing

Sustainability Improvement Observations

Write something...

Waste Log/Weight Measurement Photos

 Upload File

Sustainability Auditor Signature

Final Part Documentation & Traceability

Completion of build logs, material batch tracking, certificate of conformance (CoC) generation, and digital twin data archiving.

Date of Completion

Batch/Lot Number

Print Status

- ☐ Passed
- ☐ Failed
- ☐ Rework Required

Certificate of Conformance (CoC)

 Upload File

Verification Checks Performed

- ☐ Dimensional Check
- ☐ Material Analysis
- ☐ Surface Finish Check
- ☐ Structural Integrity Check

Quality Assurance Inspector Signature

< Previous

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✔ Finish

✎ Generate Sample Report