Project	Location	Status
—	—	—

Date	Completed by
—	—

Header / Traceability

No.	Done	Check / Requirement	Result	Notes / Evidence
1	☐	Record Project, Location, Wall/Print Segment ID, Grid/Element reference, Inspection date/time, and WIR/Inspection reference. Tools: project forms/tablet. Mark Pass/Fail/NA. Record value/observation, evidence/photo, action/NCR. Acceptance/Reference: _____	—	—
2	☐	Attach/record Approved drawing/model revision and Print File/Toolpath Revision (ID/checksum/link). Verify they match the intended wall segment. Tools: DMS, viewer. Mark Pass/Fail/NA. Record value/observation, evidence/photo, action/NCR. Acceptance/Reference: _____	—	—
3	☐	Record Printer ID, Nozzle/configuration ID, firmware/software version, calibration/verification status; Approved mix/material ID and Batch/Lot; Operator, Contractor representative, QA/QC inspector signatures. Mark Pass/Fail/NA. Record value/observation, evidence/photo, action/NCR. Acceptance/Reference: _____	—	—

Phase 1 — Before Printing / Pre-Print Release: Document and Digital Control

No.	Done	Check / Requirement	Result	Notes / Evidence
4	☐	Confirm Approved drawings/model revision governs wall geometry, cavities, and openings; note any inconsistencies. Tools: model/drawing review. Mark Pass/Fail/NA. Record value/observation, evidence/photo, action/NCR. Acceptance/Reference: _____	—	—
5	☐	Verify Approved method/procedure and applicable ITP points; confirm Hold/Witness/Surveillance stages for pre-print, live process, and final checks; confirm required reinforcement/embeds are defined. Mark Pass/Fail/NA. Record value/observation, evidence/photo, action/NCR. Acceptance/Reference: _____	—	—

Phase 1 — Survey and Substrate

No.	Done	Check / Requirement	Result	Notes / Evidence
6	☐	Set out wall centreline, corners, and openings to coordinates. Record offsets to model. Tools: total station, targets. Mark Pass/Fail/NA. Record value/observation, evidence/photo, action/NCR. Acceptance/Reference: _____	—	—
7	☐	Check foundation/substrate level and starting surface condition (clean, keyed/roughened as specified, dampness as required). Tools: level, moisture check, photos. Mark Pass/Fail/NA. Record value/observation, evidence/photo, action/NCR. Acceptance/Reference: _____	—	—
8	☐	Verify starter bars/dowels/anchors: type, location, projection, cleanliness, protection if specified. Tools: tape/gauge/photos. Mark Pass/Fail/NA. Record value/observation, evidence/photo, action/NCR. Acceptance/Reference: _____	—	—

Phase 1 — Printer Setup and Calibration

No.	Done	Check / Requirement	Result	Notes / Evidence
9	☐	Establish printer zero/reference point to site datum; confirm coordinate-system alignment to grid; record transformation (e.g., offsets/rotation). Tools: survey tie-in, controller logs. Mark Pass/Fail/NA. Record value/observation, evidence/photo, action/NCR. Acceptance/Reference: _____	—	—
10	☐	Verify level/setup, working envelope clearance, dry-run motion path, collision clearance, nozzle standoff, and calibration/verification status. Tools: electronic level, dry-run without material, standoff gauge. Mark Pass/Fail/NA. Record value/observation, evidence/photo, action/NCR. Acceptance/Reference: _____	—	—

Phase 1 — Material Traceability and Readiness

No.	Done	Check / Requirement	Result	Notes / Evidence
11	☐	Confirm Approved mix/material ID vs tickets; record Batch/Lot, supplier, certificates; note admixtures by brand/lot. Tools: delivery tickets, register. Mark Pass/Fail/NA. Record value/observation, evidence/photo, action/NCR. Acceptance/Reference: _____	—	—
12	☐	Record mixing/batching time and delivery to hopper; verify accelerator/admixture dosage setpoints and pump calibration; confirm material within approved open/printing-time window. Tools: batch logs, scales, pump settings. Mark Pass/Fail/NA. Record value/observation, evidence/photo, action/NCR. Acceptance/Reference: _____	—	—
13	☐	Perform printability checks per approved method (e.g., test bead, buildability/rheology indicators). Do not rely on slump alone. Tools: gauges, sample print. Mark Pass/Fail/NA. Record values, evidence/photo, action/NCR. Acceptance/Reference: _____	—	—

Phase 1 — Reinforcement, Embeds and MEP

No.	Done	Check / Requirement	Result	Notes / Evidence
14	☐	Verify vertical reinforcement size/spacing/position and clearance to print path; secure against movement. Tools: tape/cover gauge/photos. Mark Pass/Fail/NA. Record value/observation, evidence/photo, action/NCR. Acceptance/Reference: _____	—	—
15	☐	Confirm horizontal ties/mesh to be inserted during printing are staged, identified by layer/elevation, and accessible. Tools: tags, insertion plan. Mark Pass/Fail/NA. Record value/observation, evidence/photo, action/NCR. Acceptance/Reference: _____	—	—
16	☐	Check anchors, sleeves, service ducts, electrical boxes, inserts, and openings: labeled, correct type/size/location; plan for items that become inaccessible. Tools: layout, photos. Mark Pass/Fail/NA. Record value/observation, evidence/photo, action/NCR. Acceptance/Reference: _____	—	—

Phase 1 — Environmental Conditions

No.	Done	Check / Requirement	Result	Notes / Evidence
17	☐	Record ambient temperature, relative humidity, wind, direct solar exposure, and rain/weather risk at start. Tools: meter, onsite log/photos. Mark Pass/Fail/NA. Record values, evidence/photo, action/NCR. Acceptance/Reference: _____	—	—
18	☐	Confirm protections against drying/skinning and weather (covers, windbreaks, curing materials) are available and deployed as required. Tools: visual check/photos. Mark Pass/Fail/NA. Record observation, evidence/photo, action/NCR. Acceptance/Reference: _____	—	—

Phase 1 — Pre-Print Release Decision

No.	Done	Check / Requirement	Result	Notes / Evidence
19	☐	READY TO PRINT / HOLD: Issue pre-print release or HOLD if any critical mismatch exists (files, survey, materials, reinforcement). Tools: WIR sign-off. Mark Pass/Fail/NA. Record decision, evidence/photo, action/NCR. Acceptance/Reference: _____	—	—

Phase 2 — During Printing: Extrusion Continuity

No.	Done	Check / Requirement	Result	Notes / Evidence
20	☐	Monitor continuous flow; identify under/over-extrusion, tearing, gaps, pump pulsation, or nozzle blockage; adjust per approved procedure. Tools: visual, flow logs. Mark Pass/Fail/NA. Record observation, evidence/photo, action/NCR. Acceptance/Reference: _____	—	—

Phase 2 — During Printing: Geometry, Alignment & Buildability

No.	Done	Check / Requirement	Result	Notes / Evidence
21	☐	At checkpoints measure bead width and layer height; record wall thickness and cavity/shell dimensions where accessible; compare to approved system/project requirements. Tools: calipers, gauges, probe/laser. Mark Pass/Fail/NA. Record values, evidence/photo, action/NCR. Acceptance/Reference: _____	—	—
22	☐	Monitor lateral offset, face alignment, corners/curves, and cumulative drift; inspect lower layers for spreading, slumping, bulging, leaning, buckling, or instability. Tools: straightedge, level, visual. Mark Pass/Fail/NA. Record observation, evidence/photo, action/NCR. Acceptance/Reference: _____	—	—

Phase 2 — During Printing: Nozzle Clearance, Contact & Timing

No.	Done	Check / Requirement	Result	Notes / Evidence
23	☐	Check nozzle clearance; prevent drag/scraping or collisions with prior layers/embeds; verify layer interval timing including planned/unplanned pauses; compare to approved restart limits/procedures. Tools: standoff gauge, timer/logs. Mark Pass/Fail/NA. Record values, evidence/photo, action/NCR. Acceptance/Reference: _____	—	—

Phase 2 — During Printing: Reinforcement/Embeds & Live Defects

No.	Done	Check / Requirement	Result	Notes / Evidence
24	☐	Witness reinforcement, ties, mesh, anchors, sleeves, service inserts, insulation (if any) before concealment; photograph and log. Actively log defects (tearing, gaps, misalignment, slumping, voids, poor layer contact, cracking) and corrective actions. Mark Pass/Fail/NA. Record observation, evidence/photo, action/NCR. Acceptance/Reference: _____	—	—

Phase 2 — Print Interruption / Restart Record

No.	Done	Check / Requirement	Result	Notes / Evidence
25	☐	Record wall/segment, layer/elevation, stop time, restart time, total downtime, reason, material batch before/after, environmental conditions, exposed-layer condition, cleaning/surface prep, additional materials/treatment, inspection before restart, approval/disposition, and approved by. Mark Pass/Fail/NA. Record evidence/photo, action/NCR. Acceptance/Reference: _____	—	—

Phase 2 — Mandatory Stop / Hold Conditions

No.	Done	Check / Requirement	Result	Notes / Evidence
26	☐	Immediate STOP if: wrong location or file revision; missing structural reinforcement/critical embed; progressive bulging/buckling/instability; partial collapse; major extrusion discontinuity; significant nozzle collision. Notify engineering/QA. Mark Pass/Fail/NA. Record observation, evidence/photo, action/NCR. Acceptance/Reference: _____	—	—
27	☐	HOLD for engineering/QA disposition if: geometry drifts outside approved envelope; interruption exceeds approved limit; visible layer separation/delamination; or continuing would conceal/worsen a nonconformance. Do not proceed without approval. Mark Pass/Fail/NA. Record observation, evidence/photo, action/NCR. Acceptance/Reference: _____	—	—

Phase 3 — After Printing / Final Inspection: As-Built & Visual

No.	Done	Check / Requirement	Result	Notes / Evidence
28	☐	Survey as-built wall location, length, height, thickness, plumbness, straightness/alignment, openings, corners, connection zones, cavities where applicable; map and photograph defects (tearing, voids, separations, restarts, cracks, deformation, exposed reinforcement). Tools: survey, gauges, photos. Mark Pass/Fail/NA. Record references, evidence/photo, action/NCR. Acceptance/Reference: _____	—	—

Phase 3 — After Printing / Final Inspection: Reinforcement & Openings

No.	Done	Check / Requirement	Result	Notes / Evidence
29	☐	Verify accessible reinforcement, anchors, sleeves, penetrations, inserts, and openings are present and within specified positions/clearances. Tools: tape/cover gauge/photos. Mark Pass/Fail/NA. Record values, evidence/photo, action/NCR. Acceptance/Reference: _____	—	—

Phase 3 — After Printing / Final Inspection: Curing, Infill & Specimens

No.	Done	Check / Requirement	Result	Notes / Evidence
30	☐	Confirm approved curing method, start time, and protection (drying/thermal/physical). If cavity grouting/infill applies, verify cleanliness, reinforcement, seals/formwork, vents, and readiness. Record companion/specimen IDs, batch links, scheduled test ages, and test references. Mark Pass/Fail/NA. Record evidence/photo, action/NCR. Acceptance/Reference: _____	—	—

Phase 3 — Final Release

No.	Done	Check / Requirement	Result	Notes / Evidence
31	☐	Final disposition: Accepted / Accepted with comments (conditional) / HOLD / Rejected (NCR). Capture signatures/approvals and distribution. Tools: WIR closeout. Mark Pass/Fail/NA. Record decision rationale, evidence/photo, action/NCR. Acceptance/Reference: _____	—	—

Defect / Deviation Log

No.	Done	Check / Requirement	Result	Notes / Evidence
32	☐	Register entry: Location/layer/elevation; defect/deviation; photo/evidence ref; observation/NCR ref; engineering disposition; repair action; reinspection status; closure reference. Tools: log with QR-linked photos. Mark Pass/Fail/NA. Record details, evidence/photo, action/NCR. Acceptance/Reference: _____	—	—

Comments / Follow-up

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Checklist guidance

https://quollnet.com/chk/construction/3d-printed-concrete-inspection-checklist-before-during-after-printing

3D Printed Concrete Inspection Checklist — Before, During & After Printing is a practical, field-ready QA/QC tool for extrusion-based 3D concrete printing. It helps site engineers, inspectors, and contractors verify model/file control, material traceability, printer configuration, live process parameters, and final wall geometry. Unlike conventional concrete inspection, additive construction demands evidence of process history: which print file/toolpath revision ran, which batch was used, layer timing, interruptions, and how defects were handled. This checklist focuses on extrusion continuity, bead and layer geometry, alignment, buildability, and curing, while documenting reinforcement and embeds before concealment. Acceptance references the approved project specification, qualified printing system, method/procedure, ITP, manufacturer/system requirements, applicable codes/standards, and structural design—never universal limits. Use it to keep work within Hold/Witness/Surveillance points, log deviations, and support WIRs and NCRs where defined requirements are breached. Start in interactive mode to tick items, add comments, attach photos, and export PDF/Excel with a QR-secured record.

1. Preparation: Confirm access to approved drawings/model, print file/toolpath revision, ITP, and method statement. Calibrate measurement tools (levels, gauges, calipers). Ready photo capture and

environment meters. Brief team on Hold/Witness/Surveillance points and NCR escalation.

2. Start a New Inspection: Create a WIR-linked record. Enter header/traceability data (project, segment, revisions, printer/material IDs, roles). Attach relevant documents or links. Switch to interactive mode to enable tick boxes and comments.

3. Before Printing: Work through Phase 1 groups. Record actual values and references instead of generic tolerances. If any critical mismatch is found, select HOLD and notify engineering/QA per the ITP.

4. During Printing: Keep the checklist open. Log extrusion continuity, geometry checks, alignment/buildability, layer timing, and verification of embeds before concealment. Use quick photo annotations and timestamped notes at checkpoints.

5. Interruptions/Restarts: Use the dedicated interruption form to capture stop/restart times, layer/elevation, batch before/after, surface preparation, treatments, inspections, and approvals. Do not restart without required disposition.

6. After Printing: Complete as-built, visual, curing, and specimen entries. If applicable, confirm cavity infill readiness. Select the final disposition (Accepted/Conditional/Hold/Rejected) and collect digital signatures.

7. Export & Archive: Export the commentable interactive checklist as PDF/Excel with linked photos. Share via the WIR and archive with QR authentication to preserve

traceability.

Tick the box when complete. Record Not done or N/A in Result and note any follow-up.