

FIELD TECHNICIAN QUICK-REFERENCE CHECKLIST

Cross-Conductance Sensor Array for Concrete Hydration & Setting Monitoring

|                    |                                              |                 |                      |
|--------------------|----------------------------------------------|-----------------|----------------------|
| DOCUMENT TITLE:    | Cross-Conductance Hydration Sensor Checklist | DOC NUMBER:     | CHK-MAT-CC-003       |
| LEAD SPECIALIST:   | Kadeem Manning                               | EFFECTIVE DATE: | September 2026       |
| REVISION / STATUS: | Rev 1.0 — Approved Final                     | PAGE / SCOPE:   | Field Operation & QA |

Field Inspection & Setup Checklist

| Step # | Verification / Service Task | Target Requirement / Parameter                                      | Status                                                         |
|--------|-----------------------------|---------------------------------------------------------------------|----------------------------------------------------------------|
| 1      | Electrode Surface Audit     | 316 SS tracks clean, oil-free, no corrosion                         | <input type="checkbox"/> Pass<br><input type="checkbox"/> Fail |
| 2      | Pre-Pour KCl Calibration    | Verify cell constant in 0.01 M KCl ( $\pm 1.0\%$ )                  | <input type="checkbox"/> Pass<br><input type="checkbox"/> Fail |
| 3      | 4-Wire Kelvin Continuity    | Lead wire resistance $< 0.5\ \Omega$ per line                       | <input type="checkbox"/> Pass<br><input type="checkbox"/> Fail |
| 4      | AC Excitation Freq Setup    | Set 10 kHz AC sweep (phase angle $> -5^\circ$ )                     | <input type="checkbox"/> Pass<br><input type="checkbox"/> Fail |
| 5      | Temperature Sensor Check    | Pt100 RTD reading within $\pm 0.2^\circ\text{C}$ ambient            | <input type="checkbox"/> Pass<br><input type="checkbox"/> Fail |
| 6      | Formwork Installation       | Secure sensor inside rebar cage ( $\geq 50\text{mm}$ cover)         | <input type="checkbox"/> Pass<br><input type="checkbox"/> Fail |
| 7      | Cable Protection Conduit    | Route signal cables in rigid/flex conduit                           | <input type="checkbox"/> Pass<br><input type="checkbox"/> Fail |
| 8      | Pour Sync & Baseline Log    | Start $G(t)$ logging at $T_0$ concrete pour                         | <input type="checkbox"/> Pass<br><input type="checkbox"/> Fail |
| 9      | Setting Inflection Tracking | Monitor $dG/dt$ slope for $t_{\text{initial}}$ & $t_{\text{final}}$ | <input type="checkbox"/> Pass<br><input type="checkbox"/> Fail |
| 10     | Data Backup & Sign-Off      | Export CSV log; complete field report                               | <input type="checkbox"/> Pass<br><input type="checkbox"/> Fail |

Field Technician Notes & Site Observations

Record mix batch ID, pre-pour KCl cell constant  $K_{\text{cell}}$ , concrete pour time  $T_0$ , and initial/final setting inflection hours:

|                                        |                                                          |                                 |                            |
|----------------------------------------|----------------------------------------------------------|---------------------------------|----------------------------|
| <b>PREPARED &amp; APPROVED<br/>BY:</b> | <b>Kadeem Manning</b><br>Lead Field Specialist & QA Lead | <b>SIGNATURE:</b><br>_____<br>— | <b>DATE:</b><br>_____<br>— |
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