**Inspection and test plan – Asphalt placement**

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| **Project no.** | CC0375 | | **Project name** | Hunter Power Project | | | | | | **Date** |  |
| **Symal ITP no.** | | CC0375-ITP-010 | **Revision no.** | 3 | **Revision date** | 17/04/2023 | **Plant and equipment used** | |  | | |
| **UGL ITP no.** | |  | | | | | **SHL ITP no.** |  | | | |
| **Lot no.** | |  | **Location (chainages, detailed description or marked up plan)** | | | | |  | | | |

Attach Dockets, Certificates and QA Documents to ITP

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| Contact Details | | Summary of Requirements | | | Principle Codes / Standards | | Records | |
| **Customer:**  **Construction Manager:**  **Project Engineer:**  **Quality Representative:**  Subcontractors    Surveillance / Inspection Key  **HOLD POINT (H):** Nominated point beyond which work shall not proceed without verified acceptance by nominee.  **WITNESS POINT (W):** Points at which the nominee shall be notified and invited to witness an activity, but further work may proceed without the presence of the nominee.  **SURVEILLANCE (S): Continuing** evaluation of the status of methods, analysis of records and monitoring of activities on a random basis to ensure quality requirements will be met.  **VISUAL (V): 100**% Visual Inspection of work / item to ensure compliance with code / specification.  **DIMENSIONAL (D): Measurement** of critical dimensions to ensure work / item is within tolerance | | **Process Qualifications**  **Traceability:**  Material:  Alloy Verification  Heat Treatment:  Pressure Testing  Consumable:  NDT:  Welder ID:  WPS:  Electrical:  Instruments  **Heat Treatment:**  **Dimensional Control:**  **Testing (NDT):**  **Acceptance Specification:**  **Pressure Testing:**  **Elect. / Instrumentation:**  Notes: | | | **Client Specifications**  HPP-AEC-CIV-GN-GEN-SPT-0161\_0 QUALITY (CONSTRUCTION)  HPP-AEC-CIV-RO-PAV-SPT-1144\_0 ASPHALTIC CONCRETE (ROADWAYS)  **Engineering Procedures / WI** | | **(MDR Insert as marked 3 )**   * Inspect Release Certs. * Deviations/Concessions * Material Certificates * Conformance Certificate * Welding Records * Welder Qual. Register * NDT Reports * Report on Repairs * Heat Treatment Records * Dimensional Records * Non-Conformance Rpts * Pressure Test Records * Drawings & Data Sheets * Misc Verification Records * Electrical Test Sheets | |
| Prepared by: | Steven Lee | | Date : 17/4/23 | Approved By: Joshua Fisicaro | | Date : 17/4/23 | |  |

|  | |  | |  |  |  | **Verification of acceptance by** | | | | | | **Remarks / record (eg. test frequency, reports, certificates, checklist etc)** | |
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|  | |  | |  |  |  | **Symal Infrastructure** | | **UGL** | | **SHL** | |
| **Item no.** | | **Activity** | | **Ref docs** | **Acceptance criteria** | **Acceptance** | **Key** | **Sign date** | **Key** | **Sign date** | **Key** | **Sign date** |
| **1.0 Preliminaries** | | | | | | | | | | | | | | |
| **1.1** | | Documentation | | Issued drawings / Site copy drawings | Check that you have the latest site and engineering drawings BEFORE starting each task/set of tasks. | Yes  No  N/A | S |  | S |  | S |  |  | |
| **1.2** | | Determine lot size | | Spec. 0161 Quality [Cl 7.8] | Lots to be broken up accordingly and outlined on a lot map | Yes  No  N/A | S |  | S |  | S |  | Lot map | |
| **1.3** | | Set out | | Spec. 0161 Quality [Cl 3.13]  Drawings | Has the pavement been set out by an accredited Surveyor?  Set out comply with drawings? | Yes  No  N/A | S |  | **S** |  | **S** |  |  | |
| **1.4** | | Mix design approval | | Spec. 1144 Asphaltic Concrete [Cl 2.4] | Provide all mix designs. Mix design is to be assessed by the Superintendent for compliance.  Mix design to be approved by Superintendent before use.  **Notice: 14 working days before using mix**  **HOLD POINT** | Yes  No  N/A | **H** |  | **H** |  | **H** |  | Mix design | |
| **1.5** | | Tolerances of mix production | | Spec. 1144 Asphaltic Concrete [Cl 3.1] | Is the Binder within 0.3% of total mix?  Has the daily particle size distribution been within tolerance?  Has the daily moisture content been within tolerance – not to exceed 0.5% on completion of mixing? | Yes  No  N/A | S |  | S |  | S |  | Test report | |
| **1.6** | | Production temperatures | | Spec. 1144 Asphaltic Concrete [Cl 3.2] | Do the temperatures listed below comply with requirements for max. temperature?   * Class 170, Class 320, Class AR450 Bitumen delivered into mixer – 165ºC * Class 600 Bitumen delivered into mixer – 175 ºC * Aggregates before binder – 200 ºC * Asphalt at discharge point – 175 ºC | Yes  No  N/A | S |  | S |  | S |  | Test report | |
| **1.7** | | Certification of specification Compliance | |  | Has each delivery come with a certificate of compliance? | Yes  No  N/A | S |  | **S** |  |  |  | Certificate of compliance | |
| **2.0 Preparation** | | | | | | | | | | | | | | |
| **2.1** | | Conformance of previous layer | |  | Has the previous layer passed acceptance criteria?  Refer to ITP of previous layer. | Yes  No  N/A | S |  | S |  | S |  |  | |
| **2.2** | | Joints | | Spec. 1144 Asphaltic Concrete [Cl 3.4] | Transverse joints shall be offset by not less than 2m in adjoining paver runs and from later to layer.  Longitudinal joints shall meet the following requirements:   * Wearing course joint coincide with location of intended traffic lane lines * Intermediate and base course offset from layer to layer by not less than 150mm provided that no joint is placed directly below a trafficked wheel path * Parallel to traffic lanes   Location of planned joints is a **Hold Point**.  **Notice: 7 working day before commencing**  **HOLD POINT** | Yes  No  N/A | **H** |  | **H** |  | **H** |  |  | |
| **2.3** | | Prime application rate | | Spec. 1144 Asphaltic Concrete [Cl 3.4] | Unless otherwise directed, tack coat is to be applied to provide a uniform application rate of residual binder of between 0.10L/m2 and 0.20L/m2  Is the application rate for tack coat between the following?   * 0.15 to 0.30 litres/m 2 (60% bitumen content) * 0.30 to 0.60 litres/ m 2 (30% bitumen content) | Yes  No  N/A | S |  | S |  | S |  |  | |
| **2.4** | | Approval to proceed | | Spec. 1144 Asphaltic Concrete [Cl 2.4] | Has approval to proceed been obtained from the Superintendent?  **Notice: 7 working days before commencing production**  **HOLD POINT** | Yes  No  N/A | **H** |  | **H** |  | **H** |  |  | |
| **3.0 Placement of Asphalt** | | | | | | | | | | | | | | |
| **3.1** | | Conditions for placing | | Spec. 1144 Asphaltic Concrete [Cl 3.4] | Is the area essentially dry and free of surface water? Does the surface temperature meet requirements?   * Intermediate and base courses: 5ºC * Wearing course: 10ºC | Yes  No  N/A | S |  | S |  | S |  |  | |
| **3.2** | | Spreading | | Drawings  Spec. 1144 Asphaltic Concrete [Cl 3.4] | Has the asphalt been spread in layers at compacted thicknesses as per the drawings:   * Wearing Course: 40mm * 7mm Primer Seal   Has all asphalt been spread with a purpose designed asphalt paving machine to form a uniformly smooth asphalt mat?  Does the width of a single paving run not exceed 6m? | Yes  No  N/A | S |  | S |  | S |  |  | |
| **3.3** | | Compaction | | Spec. 1144 Asphaltic Concrete [Cl 3.4, 3.5] | Uniformly compact asphalt to below requirements as soon as the asphalt has cooled sufficiently.  **Confirm Frequency of testing and target requirements**  6 cores per lot  10 nuclear density tests per lot  Tested to the following criteria **(acceptable values to be calculated bases off formula in standard):**   * Density ratio greater than 94% for thickness less than 50mm * Density ratio greater than 96% for thickness greater than 50mm   **Notice: Progressive**  **HOLD POINT** | Yes  No  N/A | **H** |  | **H** |  | **H** |  | Test reports | |
| **4.0 Finishing** | | | | | | | | | | | | | | |
| **4.1** | | Surface finish | | Spec. 1144 Asphaltic Concrete [Cl 3.5] | Asphalt shall be consistent and uniform?  Top of asphalt shall be not more than 10mm above specified level?  Asphalt against the kerb and channel shall be flush or not more than 5mm above the lip of the channel?  Do no points on the finished surface lie more than below (medium to light traffic roads):  **Parallel to centreline**  - 7mm below a 3m straight edge for wearing course  **Transverse to centreline**  - 10mm below a 3m straight edge for wearing course | Yes  No  N/A | S |  | S |  | S |  |  | |
| **4.2** | | Survey pickup  (Top layer only, N/A for all intermediate layers) | | Spec. 1144 Asphaltic Concrete [Cl 3.5] | Has the prepared layer been surveyed in accordance with and verifying specified requirements?  The horizontal location of any point on the pavement not to vary by more than ± 50mm from the corresponding points shown on the documents, expect where alignment with existing is required. | Yes  No  N/A | S |  | S |  | S |  | As built reports | |
|  |  | | **Comments**: | | | | | | | | | | |  |
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| **Lot acceptance:** | | | | | | |
| Symal Infrastructure representative name | |  |  | Symal Infrastructure representative signature | |  | |
| UGL representative name |  | |  | UGL representative signature |  | | |
| SHL representative name |  | |  | SHL representative signature |  | | |

**Inspection Checklist Report**

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| **Project no.** | CC0375 | **Project name** | Hunter Power Project | | **Date** |  |
| **Symal ITP no.** | CC0375-ITP-010 | | | | | |
| **UGL ITP no.** |  | | **SHL ITP no.** | |  | |
| **Symal Lot no.** |  | | | | **Symal Sub Lot no.** |  |
| **Location (chainages, detailed description or marked up plan)** | | | |  | | |

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|  | | **Verify of acceptance by** | | | | | | | | | **Remarks / records** |
|  | | **Symal** | | | **UGL** | | | **SHL** | | |
| **ID No.** | **Activity to be verified** | **ITP Step No.** | **Items conforms?** | | | **NCR / Test Report No.** | | **Key** | | **Sign Date** | **Key** | | **Sign Date** | **Key** | | **Sign Date** |  | |
| Yes | No | NA |
| 1. | Documentation | 1.1 |  |  |  |  | | S | |  | S | |  | S | |  |  | |
| 2. | Determine lot size | 1.2 |  |  |  |  | | S | |  | S | |  | S | |  | Lot map | |
| 3. | Set out | 1.3 |  |  |  |  | | S | |  | S | |  | S | |  |  | |
| 4. | Mix design approval | 1.4 |  |  |  |  | | **H** | |  | **H** | |  | **H** | |  | Mix design | |
| 5. | Tolerances of mix production | 1.5 |  |  |  |  | | S | |  | S | |  | S | |  | Test report | |
| 6. | Production temperatures | 1.6 |  |  |  |  | | S | |  | S | |  | S | |  | Test report | |
| 7. | Certification of specification Compliance | 1.7 |  |  |  |  | | S | |  | S | |  | S | |  | Certificate of compliance | |
| 8. | Conformance of previous layer | 2.1 |  |  |  |  | | S | |  | S | |  | S | |  |  | |
| 9. | Joints | 2.2 |  |  |  |  | | **H** | |  | **H** | |  | **H** | |  |  | |
| 10. | Prime application rate | 2.3 |  |  |  |  | | S | |  | S | |  | S | |  |  | |
| 11. | Approval to proceed | 2.4 |  |  |  |  | | **H** | |  | **H** | |  | **H** | |  |  | |
| 12. | Conditions for placing | 3.1 |  |  |  |  | | S | |  | S | |  | S | |  |  | |
| 13. | Spreading | 3.2 |  |  |  |  | | S | |  | S | |  | S | |  |  | |
| 14. | Compaction | 3.3 |  |  |  |  | | **H** | |  | **H** | |  | **H** | |  | Test reports | |
| 15. | Surface finish | 4.1 |  |  |  |  | | S | |  | S | |  | S | |  |  | |
| 16. | Survey pickup  (Top layer only, N/A for all intermediate layers) | 4.2 |  |  |  |  | | S | |  | S | |  | S | |  | As built reports | |

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| I certify that this Lot conforms to the requirements of the design and specifications; that all associated NCRs have been closed out: and all survey, conformance testing and inspections have been undertaken in accordance with the specified requirements. | | | | |
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| **Symal Representative** |  | **Signature** |  | **Date** |
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| **UGL Representative** |  | **Signature** |  | **Date** |
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| **SHL Representative** |  | **Signature** |  | **Date** |
| **Comments:** | | | | |
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