**Inspection and Test Plan – General Concrete Paving**

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| **Project no.** | | **CC – 0374** | **Project name** | Pakenham Roads Upgrade | | **Date** |  | | **Approved by** | Mitchell Hose |
| **ITP no.** | 1630-P200-SYM-QAC-ITP-0023 | | **Revision date** | 8/01/2024 | **Plant and equipment used** | | |  | | |
| **Lot no.** |  | | **Location (chainages, detailed description or marked up plan)** | | | | |  | | |

Attach Dockets, Certificates and QA Documents to ITP

|  |  |  |  |  | **Verification of acceptance by** | | | | | **Remarks/record (eg. Test frequency reports, certificates, checklist etc)** |
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|  |  |  |  |  | **Symal** | | | **Superintendent** | |
| **Item no.** | **Activity** | **Ref docs** | **Acceptance criteria** | **Freq** | **Key** | **Resp** | **Initial/ date** | **Key** | **Sign/ date** |
| **1.0 Pre-start activities** | | | | | | | | | | |
| **1.1** | Concrete mix design approval | VR703.01  VR703.05 | Concrete mix design is approved by the Superintendent. | Prior to start of Works | H | SE |  | H |  | TeamBinder Ref No.  **\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |
| **2.0 Setting Out** | | | | | | | | | | |
| **2.1** | Setting Out | VR703.15  VR703.17 | The concrete will be constructed in accordance with the confirmed line, level, grade and cross-sectional profiles as shown on the drawings or as specified in VR703.  **The Superintendent has reviewed and confirmed the set out.** | Each Lot | H | SE |  | **H** |  |  |
| **3.0 Subgrade/Subbase** | | | | | | | | | | |
| **3.1** | Bedding Preparation | IFC Drawings  VR703.21 | Bedding material conforms to the requirements as stated in the design drawings.  Immediately before concrete is placed, the bedding is moist with no free water on the surface.  **Edgings**  Where edgings are constructed over pavement layers, bedding is provided between the pavement layer and the underside of the edging, or the edging is thickened to match the pavement layer.  Where edgings are not constructed over pavement layers, bedding is 100mm thick unless noted otherwise.  **Footpath and Other Surfaces**  For footpaths and other surfacing’s, bedding is of 100mm compacted thickness unless noted otherwise.  **Shared User Path**  For shared user paths, bedding is 150mm thick and compacted in accordance to Section 304 unless noted otherwise.  **Jointed reinforced concrete**  Bedding is to be as per IFC drawings and compacted in accordance with Vicroads Sec304. | Each Lot | R | SE |  |  |  |  |
| **3.2** | Material Testing for Concrete (if applicable) | VR304.09 | For shared user paths, scale B testing is completed in accordance with VR304 with the below requirements:   * Moisture Content: >85% * Compaction: ≥97% * Post compaction grading   For Jointed reinforced concrete, scale B testing is completed in accordance with VR304 for each material of the subbase. | Each Lot | H | SE |  |  |  | Material test results |
| **4.0 Installation of General Concrete** | | | | | | | | | | |
| **4.1** | Formwork | VR703.12 | Ensure materials, design, construction and stripping of formwork complies with AS 3610. As well as erecting formwork prior to placing concrete so that fresh concrete is not placed directly on the side of the excavation. | Each Lot | H | SE |  |  |  |  |
| **4.2** | Steel Reinforcement | VR703.13 | Reinforcement complies with AS/NZS 4671, and the minimum cover of reinforcement is 50mm or as per specified in the drawings.  Reinforcement is supported using either concrete or plastic chairs. | Each Lot | R | SE |  |  |  |  |
| **4.3** | Thickness and Steel Reinforcement Requirements | VR703.16 | The concrete paving thickness and reinforcement is as per the drawings.  **SUP's and Commercial Vehicle Crossings**  SUP’s and commercial vehicle crossings are reinforced with SL82 mesh and are 150mm and 170mm thick respectively, or as specified in the drawings.  **Medians**  Median surfacing within 2m of the edge of the median and bays of footpath, is as per design drawings and reinforced with SL72 steel mesh unless otherwise specified. | Each Lot | R | SE |  |  |  |  |
| **4.4** | Fibre Reinforced Concrete | VR 703.14 | Where fibre reinforced concrete is proposed to replace up to SL82 steel mesh, the fibres are made from virgin polypropylene or copolymer.  The properties meet the requirements of VR 703.14.  **The worksheet and/or report for determination of fibre content has been reviewed by the Superintendent.** | Each Lot | H | SE |  | **R** |  | ●Worksheet for determination of fibre content |
| **4.5** | Placing, compacting and finishing concrete | VR610.13  VR610.18  VR703.08 | Immediately before concrete is placed, the bedding is moist but has no free water on the surface as per VR 703.21.  Concrete was not mixed when the air temperature is lower than 5°C or greater than 35°C.  **Discharge Time to be 60 minutes unless mix design is approved for 90 minutes.**  Concrete was thoroughly compacted by means of continuous tamping and internal vibration.  Fresh concrete was not placed against concrete which has taken its initial set, except at properly formed construction joints. | Each Lot | H | SE |  | **H** |  | Concrete pour record attached. |
| **4.6** | Provision For Permanent Signs | VR703.22 | Sign post sockets have been supplied and installed to provide for erection of permanent signs in the areas to be paved at locations shown on the drawings.  Socket depths, dimensions and installation requirements are in accordance to Section 714.06(d). Any concrete which falls into the sleeve has been removed. | Each Lot | H | SE |  |  |  |  |
| **4.7** | Conformance Testing | VR703.11  Table 703.111 | The compressive strength of the concrete meets the requirements of table 703.111.  The frequency of sampling is once per 50m^3 of each strength grade on each day.  The consistency of the concrete is determined by using a slump test of each concrete strength sample in accordance with AS1012.3 and clause 5.2 of AS1379. (Not required for concrete used in kerbs and channels and edgings).  Sampling and testing for concrete used in shared use paths is in accordance with Section 610.  Compressive strength and slump testing is not required for concrete used in extruded kerbs and channels and other edgings. | Each Lot | R | SE |  |  |  | Concrete test results attached.  **Yes □ No □**  **N/A □** |
| **4.8** | Surface Finish | VR703.25 | Permanently hidden concrete surfaces including footpaths, edgings and other concrete surfacing have a class 4 surface finish in accordance with AS3610.  All other concrete elements have a class 3 surface finish.  **Edgings**  Edgings have been rendered with a steel trowel finish. Rendering to be applied within 30 minutes of placing concrete.  The mortar used is 2 parts fine aggregate, 1 part cement and mixed with enough water for a suitable consistency.  The thickness of the rendering does not exceed 3mm.  **Footpath, SUP & Other Surfacing's**  Concrete placed for footpaths, surfacing’s and SUP’s, has been compacted and worked until the coarse aggregate is below the surface and mortar comes to the top. Mortar has been struck off and finished to grade and cross section with a wooden float to produce a lightly textured non-skid surface. | Each Lot | R | SE |  |  |  |  |
| **4.9** | Joints | VR703.26  SD2071 | **Expansion Joints**  Expansion joints are 15mm wide and placed at intervals not exceeding 10m, on either side of vehicle crossings, at junctions with existing footpaths and SUPs. Joints are filled with cork or bituminous impregnated particle board strip extending for the full width and full depth of the paving unless noted otherwise in the drawings.  **Control Joints**  Control joints are at least 25% of paving thickness and 5mm wide at 2.5m intervals unless stated otherwise.  **Extruded Edgings**  Extruded edgings have transverse joints every 2.5m with a width of 5mm and tooled depth of 20mm.  **Indented bus bay contraction joints**  Indented bus bays have 15mm transverse contraction joints at 3m intervals, and are filled with neoprene compression seal as per SD2071. | Each Lot | R | SE |  |  |  |  |
| **4.10** | Curing of Concrete | VR703.10 | The curing process has commenced immediately after finishing operations are completed, when using either water or wet hessian or curing compound.  Curing compounds must comply with AS3799.  The curing process using a curing compound is completed for a constant period of no less 7 days uninterrupted for general concrete purposes and at least 3 days for concrete edgings. | Each Lot | R | SE |  |  |  |  |
| **4.11** | Formwork Stripping | VR703.12 | Formwork has not been removed until:  2 days for vertical formwork on external surfaces: and  1 day for vertical forms on permanently hidden surfaces. | Each Lot | R | SE |  |  |  |  |
| **4.12** | Protection of Concrete | VR703.27 | All concrete is protected from damage from early loading.  The contractor has ensured that no vehicles are permitted to cross over private entrance or commercial vehicle crossings a minimum of four days after completion of casting of concrete.  Vehicles greater than 1.5t may not be permitted to cross until after 7 days. | Each Lot | R | SE |  |  |  |  |
| **4.13** | Backfilling | VR703.29 | Concrete is backfilled no earlier than 3 days after placing. Topsoil material is free from perishable matter and then placed and compacted as specified. | Each Lot | R | SE |  |  |  |  |
| **4.14** | Inspection of Concrete Cracking | VR703.03  VR703.30  VR703.25 | Concrete has no surface cracks of width greater than 0.2mm. Where this occurs, this is identified as a non-conformance and repaired in accordance with section 687.  **Any concrete repairs have been carried out using a method and materials accepted by the Superintendent.** | Each Lot | I | SE |  | **H** |  |  |
| **5.0 Completion** | | | | | | | | | | |
| **5.1** | As Built Survey | VR703.15 | All surfaces satisfy lines, levels, thicknesses, and cross sections as specified on the drawings within the specified tolerances stated in VR703.15.  Section dimensions as per the design drawings. | Each Lot | R | SE |  |  |  | Survey Conformance Report Attached  **Yes □ No □**  **N/A □** |
| **5.2** | Test Reports | VIC Roads Specifications | All Test reports received and reviewed.  **Have all of the above been tested and proven to pass design requirements?**  **Yes □ No □ N/A □** | Each lot | R | SE |  |  |  |  |
| **5.3** | Product Non-Conformance | CQMP | All Product Non-Conformance(s) recorded and closed (if applicable)  **Have all of the above been tested and proven to pass design requirements?**  **Yes □ No □ N/A □** | Each lot | R | SE |  |  |  | NCR No:\_\_\_\_\_\_\_\_\_  **Yes □ No □**  NCR reports |
| **5.4** | Quality Representative to check the above criteria and records to confirm | CQMP  Lot Records | All above criteria met, and records identified attached.  **Have all of the above been tested and proven to pass design requirements?**  **Yes □ No □ N/A □** | Each lot | R | SE |  |  |  | Completed Checklist (if applicable) and reports and other compliance records attached. |

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| **Works complete (signer SE)** | |  | | | **Date works complete** | |  | | | |
| **Lot conforms (signer PE)** |  | | **Date lot closed** |  | | **NCR/s no. raised** | |  | **Date NCR closed for this lot** |  |

**Responsibility (Resp.) Key**: **PM**-Project Manager, **PE**-Project Engineer, **SE**- Site Engineer, **CS**-Civil Superintendent, **SS**-Site Supervisor, S**V**-Surveyor, **CR**-Client Representative **SI** – Superintendent

**Inspection Key : W –** Witness, **H –** Hold Point, **S –** Surveillance **R–** Review **I–** Inspection