**Inspection and Test Plan – Asphalt Primer/ Spray Seal**

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| **Project no.** | | CC-0374 | | **Project name** | | Pakenham Roads Upgrade | | | | | | **Approved by** | Damian Hagebols | |
| **ITP no.** | 1630-P200-SYM-QAC-ITP-0040 | | | **Revision no.** | | A | **Revision date** | 23/10/23 | **Plant and equipment used** | | |  | | |
| **Lot no.** |  | | | **Location (chainages, detailed description or marked up plan)** | | | | | |  | | | | |
| **Layer thickness** | | |  | | **Date works commenced** | | |  | | | **Date works completed** | | |  |

Attach Dockets, Certificates and QA Documents to ITP

|  | |  |  |  | |  | | | | | **Verify of acceptance by** | | | | **Remarks / record (eg. test frequency, reports, certificates, checklist etc)** | |
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|  | |  |  |  | |  | | | | | **Symal Infrastructure** | | **VicRoads** | |
| **Item no.** | | **Activity** | **Ref docs** | **Acceptance criteria** | | **Acceptance** | | | | | **Key** | **Sign date** | **Key** | **Sign date** |
| **1.0 Preliminaries** | | | | | | | | | | | | | | | | |
| **1.1** | | Commencement of works | Sec 408.04 (b)  Sec 408.09 (d)  Sec 173.02  1130.03d | • Prior to the works being carried out, the Contractor shall provide written confirmation of the works that will be undertaken the following day and obtain agreement from Superintendent to any variation in the design rates of application to those provided under Cl. 408.13(a)  • Works shall not commence until the Contractor & Superintendent have agreed that the road or pavement surface is fit & ready for surfacing no more than 24 hours prior to works occurring  • V/R 310 shall be satisfied for initial seals  • Priming and initial sealing shall only be undertaken when the prevailing weather conditions, when assessed in accordance with AAPA HSE Guide No.8 – Environmental management when spraying bituminous materials, have a risk rating of ‘low’ or less and appropriate work practices to minimise risks are in place  • Unless otherwise specified, the extent of each lot shall not exceed one day's production  • Priming must not be carried out within 24 hours of forecast rain. (PS 3040.06h(viii)  A pre-sealing workshop is undertaken to present the below including the sealing subcontractor, the Superintendent and technical representatives from DTP prior to the preparation and sealing of any base course pavement layer.  (A) pavement surface preparation;  (B) assessment of priming and sealing application rates;  (C) the application of traffic on the sealed surface;  (D) proposed periods for sealing;  (E) protection of completed seals against rain or drop in temperature;  (F) removal of aggregate;  (G) Pavement Marking; and  (H) general maintenance of the newly sealed surface. (Table 1067.11, PS 3040.06)  i) Construction program includes details of the sealing works.  ii) a detailed program of planned sealing jobs on each day of the following week has been submitted on each preceding Thursday for Superintendent's review during the period of the contract. (VR 408.04b) | |  | | | | | **H** |  | **H** |  |  | |
|  | | | | |
| **1.2** | | Aggregate Spreading (Forward facing) | Sec 408.13 (f)  Sec 408.13 (d) | Prior to commencing works - All aggregate spreading or discharge shall be undertaken using forward aggregate spreading & discharge plant.  Minimum Temperature to meet criteria as set out in Table 408.131  Minimum Temperature shall not apply to Strain Alleviating Membrane  Forward aggregate spreading plants have been endorsed by the DTP - Chief Engineer (Roads). (408.13f)  Aggregate stored at stacksites are managed to avoid contamination from other materials on the stacksite or from other sources such as vegetation, debris etc. (VR 408.12a)  For pre-coating material -  i) Pre-coating material is conforming to VR 831.07 requirements.  ii) Proposal to use alternative pre-coating material to the requirements of 831.07 are submitted for Superintendent's review minimum 10 days prior to use.  iii) Min. 3 years field performance has been submitted prior to using any proprietary material.  iv) Untried material has not been used without Superintendent's approval. (VR 408.09b, 831.07) | |  | | | | | S, I |  |  |  |  | |
| **1.3** | | Design Rates | Sec 408.13 (a)  Sec 408.07  Sec 408.15 | The Contractor shall determine the design rates of application in accordance with the procedures set out in the Guide to Pavement Technology: Part 4K.  Rates shall be expressed in L/m2 and residual binder at 15°C.  At least 1 week prior, design rates of application, aggregate and rates for pre-treatment to be reviewed by Superintendent.  Prior to commencing works Calibration Certificate to be provided.  Detail design calculations are shown in design. (VR 408.13a)  Variation in binder and aggregate application rate is calculated and submitted for acceptance of the work. VR 408.15 | |  |  | | litres/m2 | | **H** |  | **H** |  | Desing Rates received and attached | |
| at 150C | | | | |
| Yes  No  N/A | | | | |
| **1.4** | | Air temperature | Sec 408 | Is the air temperature suitable for the application? | |  |  | | |  | **H** |  | **H** |  |  | |
| Initial treatment: | |  | | |  |
| Primes Primerseals (single/single) Primerseals (double/double) | 10 15 10 |  | 0C (air) | | |
| Reseal treatments: | |  | 0C pavement) | | |
| C170 and crumb rubber modified PMBs Other PMBs Geotextile reinforced seals  Recommendation - No rain forecast within 48 hours of sealing specially in routes of heavy traffic. (Pavement worktips-18) | 15 20 20 |  | | |  |
| **1.5** | | Written confirmation | Sec 408.03 | Has written confirmation of the works been sent to the Superintendent with confirmation received the day prior to application? | | Yes  No  N/A | | | | | R |  | R |  |  | |
| **1.6** | | Bitumen | Sec 408.08 (a)  Sec 480.08 (b) | Bitumen shall be Class 170 complying with the requirements of AS 2008  • C170 incorporating ≤ 5 Pts CR is considered to be an unmodified bituminous binder.  Bitumen emulsion shall comply with the requirements of AS 1160 | | Yes  No  N/A | | | | | R |  | R |  | Compliance Certificate received and attached | |
| **1.7** | | Seal preparation | Sec 408.03 | Has area been inspected by Contractor and Superintendent and are both in agreement that road is fit to surface?  Edge lines/lane lines are correctly marked prior to priming. (VR 310.02) | | Yes  No  N/A | | | | | **H** |  | **H** |  |  | |
| **1.8** | | Materials supplied | VicRoads Sec408  Supplier Information  Sec 408 (c)  Sec 408 (e)  Sec 480.09 (a)  Sec 408.09 (e) | The bituminous material, crumb rubber, and aggregate supplied all conform to VicRoads as per supplier delivery?  Cutback Bitumen - Cutback bitumen shall comply with the requirements of AS 2157  Primer - Cutback bitumen only. NB: bitumen emulsion alternative acceptable upon providing evidence of its characteristics.  Adhesion Agent - Satisfactory field performance. When adhesion agent is added to the binder, the total volume of adhesion agent ≤1% of the binder.  Geotextile Fabric - Non-woven needle punched fabric - min weight 135 g/m2 for seals of nominal size of 14mm and under, and 175 g/m2 for seals of nominal maximum size of larger than 14mm, melting point > 10 C above max binder spraying temp.  For sealing aggregate -  i) Each lot at the quarry has unique lot identification number and is mentioned on the delivery docket.  ii) Aggregate testing is done not more than 90 days prior to delivery. (VR 831.05b)  i) Cutter is conforming to testing requirements in Table 408.091.  ii) Min. 3 years field performance has been submitted prior to using any material non-conforming to Table 408.091.  iii) Untried material has not been used without Superintendent's approval. (VR 408.09d) | | Yes  No  N/A | | | | | R |  |  |  | Material documentation received and attached | |
| **1.9** | | Binders for treatment types | Sec 408.10 (a), (b) | Initial Seal Binder - the binder to be used in Initial Seals shall be a suitable cutback bitumen, bitumen emulsion or a 9% (10 parts) crumb rubber modified binder. Other modified binders may be used subject to approval of the Superintendent. The Initial Seal shall be waterproof and capable of adhering to the pavement surface while retaining sufficient binder on the surface to hold the aggregate in place. Final Seal and Reseal Binders - Unless otherwise specified in Table 408.191, one of the following binder classes and seal sizes outlined in Table 408.101 shall be used.  Pavement temperature is adopted instead of air temperature to decide the percentage of cutter to be added. Variation in cutter among shaded areas and unshaded areas are carefully considered.  Prime is cured for at least 72 hours prior to sealing.  Aggregate pre-coat should be dry. If the pre-coat is wet, amount of cutter is carefully reduced | | Yes  No  N/A | | | | | W, R |  |  |  |  | |
| **1.10** | | Aggregate | 408.09 (b) 408.11 (a), (b) | Aggregate shall comply with the following Standard Specification Sections:  • 801 – Source Rock;  • 831 – Aggregate; and  • 832 – Sands  Maximum lot size 350t of same class and size  Acceptance of Aggregate - If all of the specified test results comply with the relevant requirements of Clauses 831.04(d), (e) and (f) the aggregate represented by the lot will be accepted  • Aggregate which does not meet the above acceptance criteria shall not be supplied or delivered.  Aggregate Pre-coating Materials - Distillate based product, cutback bitumen, emulsion based product or proprietary product.  Supply plant pre-coated aggregate from supplier or field pre-coated aggregate from stack site | | Yes  No  N/A | | | | | **H** |  | **H** |  | Test Certificate received and attached | |
| **1.11** | | Conformance of previous layer |  | Has the previous layer passed acceptance criteria? | | Yes  No  N/A | | | | | S |  |  |  |  | |
| **3.0 Application of spray seal** | | | | | | | | | | | | | | | | |
| **3.1** | | Surface Pre-treatment | Sec 408.13 (b) | Correct variable surface texture shall be allowed for by contractor and carried out as part of the works to meet the requirements of Surface Texture and Aggregate Retention.  Refer Tables 408.191, 408.152, 408.153 | | Yes  No  N/A | | | | | S, I |  |  |  |  | |
| **3.2** | | Rolling of Aggregate | Sec 408.13 (g) | Rolling of aggregate shall:  • be undertaken over the full width of the pavement being sealed including any untrafficked areas  • be undertaken by static rubber tyred rollers unless otherwise specified or approved by the Superintendent | | Yes  No  N/A  Yes  No  N/A | | | | | S, I |  |  |  |  | |
| **3.3** | | Sweeping of Road Surface | Sec 408.13 (h) | • All surfaces shall be inspected prior to the application of a sprayed seal treatment to ensure that a clean surface is available for sealing works that is free from dirt, loose aggregate and other detritus  • For multiple application treatments, intermediate sprayed seal layers shall be thoroughly swept to ensure that loose aggregate particles are removed prior to the application of the subsequent sprayed seal layers. This includes areas where an overlap of aggregate has occurred during the spreading operation  Traffic speed is controlled as per VR 166 as long the sealed surface is not swept. (VR 408.14) | | Yes  No  N/A | | | | | **H** |  | **H** |  |  | |
| 3.4 | | Geotextiles | Sec 408.13 (c) | Geotextile fabric shall be fixed to the pavement surface free of wrinkles and/or folds.  Transverse joins shall be butt jointed.  Longitudinal joins shall be overlapped approximately 150mm and be located along lane lines.  During placement of geotextile -  i) Additional binder as per seal design is added at the joints.  ii) Bond coat is applied as per seal design extending approximately 100mm beyond the geotextile.  Recommendation - Geotextile Reinforced Seal is not programmed after 2nd week of March, when there is a rain forecast within 2 weeks and temperature is below 20°C. Coarse surface texture>2mm is corrected before applying Geotextile Reinforced Seal. | | Yes  No  N/A | | | | | **I** |  |  |  |  | |
| 3.5 | | Removal of loose aggregate | Sec 408.14 | All areas – within 8 hours of sealing unless otherwise agreed with the Superintendent.  NB: For seal of nominal size ≥ 10mm, < 40 loose stones/m2 to remain after removal of loose aggregate. For seal of nominal size ≤ 7mm, < 60 loose stones/m2 to remain after. | | Yes  No  N/A | | | | | **I** |  |  |  |  | |
| **3.6** | | Acceptance of work - Aggregate retention | Sec 408.15 (c) | Does the seal meet the visual inspection for aggregate retention as per Table 408.151 | | Yes  No  N/A | | | | | I |  |  |  |  | |
| **3.7** | | Acceptance of work - Visual uniformity | Sec408.15 (d) | Is the seal uniform in colour and texture? | | Yes  No  N/A | | | | | I |  |  |  |  | |
| **3.8** | | Job completion report | Sec408.17 | Job completion report (Spray Sheets) to be submitted within seven days of completion of sealing works. | | Yes  No  N/A | | | | | R |  |  |  | Attach job completion | |
| **3.9** | | Maintenance of seals | Sec408.16 | The contractor shall be responsible for the monitoring & maintenance of seals from the time of application until the end of the defects liability period.  The Contractor shall advise the Superintendent in writing of the proposed treatment to effect the above work before undertaking the work  The Contractor shall obtain the agreement of the Superintendent of the proposed treatment before undertaking the work. | | Yes  No  N/A | | | | | S |  | S |  |  | |
|  | **Comments**: | | | | | | | | | | | | | | |  |
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| **Works complete (signer SS)** | |  | | | **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, **SV**-Surveyor, **CR**-Client Representative

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