SPARK – North East Link – Primary Package

Inspection and Test Plan (ITP)

ITP Title: Hot Mix Asphalt Placement

ITP Number: NEL-CNT-SDC-2990-PQA-ITP-0059 Rev 0

LOT Number: _____

Primary Asset Location Code: _____

Discipline: Pavements

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Spark NELP Approval Record

Function	Position	Name	Signature	Date
Prepared By	Quality Representative	Abiola Olulana	Abiola Olulana Digitall signed by Abiola Olulana Date: 22.09.28 16:36:50 +10'00'	
Reviewed By	Project Engineer	Fred Valadkhani		30/09/2022
Approved By	Quality Manager	Greg Iro	Digitally signed by Greg Iro Date: 2022.10.05 14:49:41 +11'00'	

Note:

1. *Ensure all Records or Checklist References are attached and that each Inspection Requirement is clearly named, signed, and dated.*
2. *Ensure every Records or Checklist References attached are legible*
3. *This Inspection Test Plan may be generic – ensure the requirement is demographically clear to your scope of work*
4. *Verification Inspections where applicable for the IREA stated as "Witness" or "Hold" shall be formally notified for their engagement and with sufficient advance notice time (i.e. 3 days or as agreed with the Sub-IREA Representative and/or the Nominated Authority)*
5. *All Nominated Authority Hold Points are Witness Points for Sub-IREA*
6. *The Sub-IREA representative is not required to physically sign-off on ITPs*

INSPECTION AND TEST PLAN (ITP)

	Project: SPARK – North East Link Primary Package **Client:** State of Victoria and the North East Link State Tolling Corporation
ITP Title: Hot Mix Asphalt Placement **Description:** This ITP covers the placement of Dense Graded Asphalt (DGA), Open Graded Asphalt (OGA), and Stone Mastic Asphalt (SMA)	**References:** Drawing numbers and specifications – IFC Drawings, VR173, VR402, VR404, VR407, VR417, Design Management Plan, Construction Quality Management Plan (CQMP), Project Scope and Delivery Requirement (PSDR) **Standards:**
	ITP No: NEL-CNT-SDC-2990-PQA-ITP-0059 **Rev No**: 0
	Lot No:_____ **Location**:_____ **Ch**:_____ **to**_____ **Offset:**_____ **to**_____ **Layer**:

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							Sub- Contractor	Spark NEL Engineer	Nominated Authority	IREA		
1.0	**Preliminaries (Include all aspects of Materials, Approvals, IFC Drawings, etc. Ensure all required permits have been raised prior to commencing works)**											
1.1	PE	Construction Package Approval	PSDR Part F6 2 (a) to (h)	Construction Documentation shall be submitted and approved prior to commencing work at site.	R	PW	NR	**HP**	NR	NR	IFU Construction Package InEight Reference: #_____	
1.2	PE	Design status	PSDR Part F5, 2(b) & (c)(i)	Design to be IFC prior to works commencing	V	PL	NR	**HP**	NR	NR	IFC Drawings InEight Reference: #_____	
1.3	SE	All Equipment calibrated	Quality Management Plan Section 11.1	Equipment calibration certificates filed in InEight Ensure all equipment associated with the relevant works is calibrated	R	PW	**HP**	**HP**	NR	NR	Calibration Certificates InEight Reference: #_____	
1.4	PE	Survey Set Out	PSDR Part F4 Section 6 IFC Drawings	Clearly mark limit of works; Chainage, offsets, cut/fill level etc. (if required)	V	PW	**HP**	**HP**	NR	NR	Survey Record InEight Reference: #_____ This ITP Lot Map	
1.5	PE	Sub-Contractor(s) Quality Documents (including Asphalt quality plan)	CQMP VR160 VR407.04, VR407.11	Ensure Sub-Contractor have submitted signed quality documentation ITP (if required) and checklist along with all relevant supporting documents. In addition to meeting the requirements of Section 160, the	R	PW	**HP**	**HP**	NR	NR	Approved Subcontractor Quality Documentation InEight Reference: #_____	

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INSPECTION AND TEST PLAN (ITP)

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				Contractor shall provide an asphalt quality plan that addresses section 407.04. Production, storage, discharge and compaction temperature ranges for warm mix asphalt shall be included in the Contractor's asphalt quality plan.								
1.6	PE	Asphalt Mix Design	VR 404.05 VR 407.09	No asphalt shall be supplied until the mix has been registered and the Nominated Authority approves the mix for use. The Contractor shall only use asphalt mixes that are registered by VicRoads as 'General' mixes. The Contractor shall submit documentation to the Nominated Authority nominating the asphalt mixes to be supplied no less than 7 days prior to their use.	V	PW	**HP**	**HP**	**HP**	WP	HP Release InEight Reference: #_____	
1.7	SE	Batching Plant Material Conformance	VR407.05, Table 407.051, VR407.06, 407.07, 407.08, 407.10, 407.11, 407.15	Obtain and review quality records from batching plant to ensure VicRoads testing requirements are met. The frequency of inspection and testing shall not be less than that shown in Table 407.151.	R	PW	**HP**	**HP**	NR	NR	Quality Records	
1.8	PE	Bituminous Materials	VR 407.08 (d)	From 1 July 2022 only trackless tack coat will be permitted.	V	PW	**HP**	**HP**	**HP**	WP	HP Release InEight Reference: #_____	

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ITP Title: Hot Mix Asphalt Placement

Description: This ITP covers the placement of Dense Graded Asphalt (DGA), Open Graded Asphalt (OGA), and Stone Mastic Asphalt (SMA)

References: Drawing numbers and specifications – IFC Drawings, VR173, VR402, VR404, VR407, VR417, Design Management Plan, Construction Quality Management Plan (CQMP), Project Scope and Delivery Requirement (PSDR)

Standards:

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				The Contractor shall submit the details of the trackless tack coat proposed to be used in the works.								
2.0	**Operations (Include Work Execution – Installation / Manufacturing Process step-by-step)**											
2.1	PE	Rap Management	VR 407.13 (f)	No asphalt containing RAP shall be supplied until the Department of Transport approved RAP Management Plan has been submitted at least 14 days prior to the asphalt works commencing and approval to proceed is given by the Nominated Authority.	V	PW	**HP**	**HP**	**HP**	WP	HP Release InEight Reference: #_____	
2.2	SE	Site Inspection and Base Condition	VR 407.18	Surface for asphalt placement is essentially dry and free from puddles, defects (holes, cracks, unstable material, and edge irregularities) and loose materials. Where specified in Clause 407.30(d), all manhole and valve covers shall be raised or lowered to the new surface level.	I	PL	**HP**	**HP**	NR	NR	Condition Report, Photos	
2.3	SE	Planning of Joints and Junctions	VR 407.21 (a) – (f) and Table 407.211 VR417.11	DGA: Contractor to produce drawing showing locations of longitudinal joints of asphalt layers in respect to traffic lane lines (if requested by Nominated Authority) All transverse joints shall be offset from layer to layer by not less than 2	V (Measure and mark out runs by tape measure or survey)	PW	WP	WP	WP	WP	WP Release InEight Reference: #_____ Photos	

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							Sub- Contractor	Spark NEL Engineer	Nominated Authority	IREA		
				m. Temporary ramping shall not be steeper than as specified in Table 407.211. OGA: Where new asphalt is needed to match existing pavement surface, the junctions are to be constructed using size 10 Type H DGA over the full width as per following: · Side street/median openings: 600mm · Carriageways with <=75km/h: 3m · Carriageways with >75km/h: 6m If any section needs to be feathered (<20mm depth), such "feathering" shall be carried out with Type N or H, size 7 or size 10 dense graded asphalt as specified. "Feathering" constructed in the direction of paving shall be placed by the paving machine.								
2.4	SE	Application of Tack Coat	VR407.19	A tack coat shall be applied to all asphalt, concrete or sprayed seals on which asphalt is to be placed. . Uniform tack coat sprayed to area where asphalt is to be at a rate of 0.15-0.3L/m^3 residual bitumen. Rate doubled for joints and chases.	I	PL	**HP**	**WP**	NR	NR	This ITP Photos including an identifiable landmark relevant to the lot.	

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							Sub- Contractor	**Spark NEL Engineer**	**Nominated Authority**	**IREA**		
				· Enough time allowed for emulsion tack coats to break. · Tack coats not covered by asphalt covered with clean grit or sand before traffic allowed. NOTE: Tack coat not required on clean, untrafficked, freshly placed asphalt, clean primed surface, or on granular material when layer to be placed min 150mm.								
2.5	SE	Profiling (Cold Planning) and preparation works	VR402	Profiling to leave a uniform surface to the nominal depth and width of pavement to be removed. The surface shall be swept clean of all loose material prior to placing asphalt. Pavement to be free from surface water.	V	PL	WP	WP	NR	NR		
2.6	SE	Approval for commencement of Placing	VR407.23, VR404.13, VR 407.22	The placement of asphalt on the sub-base or granular base for a new pavement or for an overlay of an existing bituminous surfaced pavement shall not commence until approval to proceed is obtained from the Nominated Authority.	V	PL	**HP**	**HP**	**HP**	WP	HP Release InEight Reference: #_____	
2.7	SE	Placement Trial (if required)	VR407.22, VR407.17 ((b)	The Nominated Authority may require a placement trial as detailed in Clause 407.22 to demonstrate that the Contractor's cold weather placement procedures will meet the requirements of this specification.	I	X1	WP	WP	WP	WP	WP Release InEight Reference: #_____	

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							Sub- Contractor	Spark NEL Engineer	Nominated Authority	IREA		
2.8	SE	Asphalt Delivery	VR407.11 (a), (b), (c), (d), & (e), VR407.16, VR407.20	Asphalt shall be placed at a rate that matches the plant and asphalt delivery capacity and ensures continual paving. Where requested by the Nominated Authority, testing for particle coating shall be undertaken in accordance with AS/NZS 2891.11 Where asphalt is scheduled for measurement by mass, a copy of the delivery docket for each load shall be provided at the point of delivery or delivered to the Nominated Authority at the end of each shift. Where asphalt is measured by other means and for Lump Sum Contracts, the Contractor shall make delivery dockets available for inspection on request by the Nominated Authority.	R & V	Each Delivery	WP	WP	WP	WP	WP Release InEight Reference: #_____ Delivery Docket Temperature Register	
2.9	SE	Ambient Conditions for Placing	VR 407.17, Table 407.171, VR417.08	Prior to commencing cold weather placement of asphalt, the Contractor shall submit a job specific cold weather placement management plan to the Nominated Authority for review. Most of the surface area to be paved has a temperature greater than or equal to the following: DGA:	V	PW	**HP**	**HP**	**HP**	WP	HP Release InEight Reference: #_____ Temperature Recordings (photos) Approved Cold Weather Placement Management Plan (For DGA)	

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							Sub- Contractor	Spark NEL Engineer	Nominated Authority	IREA		
				Base & Intermediate Courses: 5°C for specific binders C170 or C320, or 10°C for PMBs & Class 600 Wearing Courses: 10°C for specific binders C170 or C320, or 15°C for PMBs. OGA: majority of area to be paved has surface temperature of not less than 15˚C							
2.10	SE	Commencement of Placement	VR407.23, 407.25 VR404.13 VR417.08, VR417.10	DGA · Asphalt placement on the sub-base or granular base for a new pavement or for an overlay of an existing bituminous surfaced pavement shall not commence until approval to proceed is obtained from the NA SMA Placement cannot commence until NA approval. OGA Cannot be placed if surface area majority to be paved is of temperature < 15˚C · If a stationary paver screed is in contact with asphalt, the screed heating is to stop.	I	PL	**HP**	**HP**	**HP**	WP	HP Release InEight Reference: #_____ Photos	

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							Sub- Contractor	Spark NEL Engineer	Nominated Authority	IREA		
				· OGA Layer thickness to not be less 20mm. And lot mean thickness to meet specification. · Max test lot is 4,000m^2 · Unless noted otherwise, all areas of existing pavement surface that is not free draining shall be filled or regulated with DGA as specified prior to paving the OGA.								
2.11	SE	Spreading	VR407.25	Asphalt shall be spread in layers at the compacted thicknesses shown on the drawings or specified. All asphalt shall be spread with an asphalt paver except for small areas where use of a paver is not practicable. Asphalt paver screed levels shall be controlled by a suitable combination of manual and automatic controls operating from fixed or moving references	V	PL	WP	WP	NR	NR	This ITP	
2.12	SE	Compaction	417.12 VR404.14, 404.15, Table 404.142 VR 407.26, 407.27, Table 407.271,	· OGA To have 5 passes with a static steel wheeled roller of 6 tonnes minimum. · DGA Asphalt uniformly compacted as per VR 407.27 · SMA	V	PL	**HP**	WP	NR	NR	Compaction test results	

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			407.272, 407.273	To immediately compact post-placement – VR407.21 plus the exception. · Testing on a LOT basis undertaken for all materials. · Works represent by a lot of six test shall be assessed as per Table 407.271 and 407.272 for DGA, and Table 404.141 for SMA - Works shown as either four or five cores shall be assessed as per Table 407.273 for DGA, and Table 404.142 for SMA · No Pneumatic tyred rollers to be used. · Vibrational rollers can be used for a max of two passes; and must discontinue immediately if breakdown of the surface aggregate occurs.								
2.13	SE	Trafficking pavement after placement	VR 404.14	No traffic is to be allowed on the SMA until Nominated Authority has agreed that the asphalt is less than 40˚C and is trafficable	V	PL	**HP**	**HP**	**HP**	WP	HP Release InEight Reference: #_____	
2.14	SE	Layer Thickness and Level Control	Pavement Design Details VR407.28, VR407.25(b)	Thickness of asphalt layer conforms to asphalt thickness on drawings or specifications. Trafficking of asphalt or placement of asphalt over freshly laid asphalt layer	V (Method dips using ruler or	X1	WP	WP	NR	NR	Survey Report InEight Reference: #_____	

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				is not permitted unless the majority of the asphalt has a surface temperature lower than that specified in Table 407.281	dip stick)						Survey Performance Report	
2.15	SE	Paver Stoppages	VR407.25	A transverse joint shall be constructed if the asphalt in front of the screed cools to below 120°C.	V (Method thermo meter)	X1	WP	WP	NR	NR	This ITP	
2.16	SE	Surface Finish and conformity with drawings	VR 407.24, 407.29, 407.30 (b), (f) VR 173	· Regulated asphalt course, size, and type used to correct pavement shape to match final and finished surface – 407.24. All asphalt works require: i) Surface Finish- finished surface to be uniform appearance; free of dragged areas, cracks, open textured patches, and roller marks. ii) Kerb & Channel Surface of asphalt at edge of wearing course to either be flush or not more than 5mm above lip of channel iii) Shape Finished surface of the wearing course at no stage to be 4mm below a 3m stage edge laid either parallel to the centreline of pavement (if pavement surface has crowned section; laid right angles to centreline)	I	PL	WP	WP	WP	WP	WP Release InEight Reference: #_____ Survey Report InEight Reference: #_____	

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				For intermediate, base course layers, cannot be more than 6mm and 10mm respectively below the straight edge. iv) Alignment Where asphalt is not placed against any concrete edging, the edge of asphalt layers is not to be less than 50mm inside or more than 100mm outside the designed offset from the centreline (design line). In addition, the rate of change of offset of the edge to not be more than 25mm in 10m. v) Width Where asphalt is not placed against any concrete edging, the edge of asphalt layers is not to be less than 50mm from the design or specified width or greater than 100mm. The average width over any 300m is not to be less than design or specified width. Conformity of newly placed asphalt to New Pavements and Major Pavement Rehabilitation Project; when design drawings show finished surface level and thickness of each pavement course, are to have each surface level of each asphalt course to be measured as per VicRoads Section 173. Every test lot shall meet								

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				either a Scale A, B or C requirement as specified in 407.29(b)(i & ii) and 407.30(b) Note: unless otherwise specified in 407.30(f), max lot size for measurement and assessment of surface level to be no more than 4,000m². Asphalt Overlays – where min average or nominal thickness of overlay is specified and no existing pavement or finished levels are available then average overlay thickness can be calculated as per formula specified in 407.29(c).								
2.17	SE	Surface Rectification (If required)	VR407.29	Rectification of surface levels shall not commence until approval to proceed is obtained from the Nominated Authority	I	X1	**HP**	**HP**	**HP**	WP	HP Release InEight Reference: #_____	
3.0	**Post Operations (Include Inspection and Testing)**											
3.1	PE	Verification and Lot Records complete	CQMP Section 8.3	Progressive monitoring and signoff of Checklists occurs, and test records are collected. Ensure completed work checklists, inspection and test results and Subcontractor conformance records are progressively and permanently saved and stored as soon as possible after they are received. Completed construction lot	V	PL	**HP**	**HP**	NR	NR	Lot Record Lot Map	

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							Sub- Contractor	Spark NEL Engineer	Nominated Authority	IREA		
				records are transferred to the project Quality Team for final record verification prior to being closed								
3.2	PE	Redline Drawings	Design Management Plan NEL-CNT-SDC-2990-PDM-MPL-0001 Section 5.4	Redline Drawings submitted to Project for creation of As-Built Drawings.	V	PL	**HP**	**HP**	NR	NR	Red-Line Marked Up IFC Drawing(s)	
3.3	PE	NCR Close out (if applicable)	CQMP Section 8.3	All NCR's presented for closure	R	PL	**HP**	**HP**	**HP**	WP	HP Release InEight Reference: #_____ NCR InEight Reference: #_____ NCR Module	
4.0	**Quality**											
4.1	QSR	Identification and control of non-conforming products or services (if applicable)	CQMP Section 8.3	Review and confirm closure of NCR's and associated RFI's prior to closing of construction lot	R	PL		**HP**			NCR closed with related documentation	

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INSPECTION AND TEST PLAN (ITP)

	Project: SPARK – North East Link Primary Package **Client:** State of Victoria and the North East Link State Tolling Corporation
ITP Title: Hot Mix Asphalt Placement **Description:** This ITP covers the placement of Dense Graded Asphalt (DGA), Open Graded Asphalt (OGA), and Stone Mastic Asphalt (SMA)	**References:** Drawing numbers and specifications – IFC Drawings, VR173, VR402, VR404, VR407, VR417, Design Management Plan, Construction Quality Management Plan (CQMP), Project Scope and Delivery Requirement (PSDR) **Standards:**
	ITP No: NEL-CNT-SDC-2990-PQA-ITP-0059 **Rev No**: 0
	Lot No:.....**Location**:.....**Ch**:.....**to**.....**Offset:**.....**to**.....**Layer**:

Item No.	Resp. Person	Inspection and Test Activity	Specification Reference	Acceptance Criteria	Test Method	Test Freq.	Inspection/Verification (Name, signature & date)				Records/Documents	Field Notes / Comments
							Sub- Contractor	Spark NEL Engineer	Nominated Authority	IREA		
4.2	QSR	Check all quality records for lot closure	CQMP Section 8.3	All applicable quality records are complete	R	PL		HP			Compiled documents (all data reports and records)	

Legend:

Responsibility		Method	Inspection / Verification	Test Frequency	Other
SS: Site Supervisor SE: Site Engineer PE: Project Engineer SPE: Senior Project Engineer GE: Geotechnical Engineer PS: Project Surveyor	PSM: Project Systems Manager QSR: Quality Site Rep. STR: Structural Engineer SSR: Site Safety Rep. EMR: Environmental Management Rep. NA: Nominated Authority (Release of HP) IREA: Independent Reviewer (Observer)	V: Verify I: Inspection R: Review T: Test	HP: Hold Point WP: Witness Point NR: Not Required	PW: Prior to Works PL: Per Lot F: Full or 100% Inspection or Testing X1: Inspect or Test at Specified Frequency X2: Random Inspection or Test	QP: Quality Plan RFI: Request for Information NCR: Non-Conformance VC: Verification Checklist XXXX: Sequential Number from Doc Control

DDD – Types: B – Building, C – Civil, G – General, M – Mechanical & Electrical, I – Motorway Operations System (ITS), S – Structure, O – Tolling, T – Tunnel, U – Urban Design & Landscape

Supplier/Subcontractor: (If applicable)	Name	Signature and Date	Spark-NELP REP	Name	Signature and Date

Lot closure comments:

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Spark NELP QA Rep:

Name_____ Signature: _____Date: _____

Table 407.051: Maximum Proportion of Warm Mix Additive

Additive Type	Maximum Proportion by Mass of Binder %
Wax	1.5
Chemical surfactants	1.0
Water (applied directly or in the form of crystals containing water)	3.0

Table 407.061: Quality of Coarse Aggregates

Type of Asphalt	Flakiness Index (%) (max)	Total of Marginal and Unsound Rock (% by mass) (max)	Unsound Rock (% by mass) (max)
H and V Series	35	8	3
L, N, and S Series	35	10	5

Table 407.062: Fine Crushed Aggregate Components

Test Value	
Degradation Factor (min)	Plasticity Index (max)
60	3

Table 407.063: Glass Fines

Sieve Size AS (mm)	Percentage Passing (by mass)
6.70	100
4.75	98 – 100

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Table 407.071: Grading Limits for Cement Kiln Dust and Ground Limestone

Sieve Size (mm)	Percentage Passing by Mass
0.600	100
0.300	95 – 100
0.075	75 – 100

Table 407.072: Additional Test Requirements for Added Filler

Added Filler Type	Test	Test Limit (%)
Cement Kiln Dust Ground Limestone GGBFS Portland Cement	Moisture Content[1]	3 (Max)
Cement Kiln Dust	Water Soluble Fraction[2]	20

Notes on Table 407.072
1. Tested in accordance with AS 4489.8.1
2. Tested in accordance with AS 1141.8

Table 407.101: Production Tolerances for Mix Grading

Sieve Size AS (mm)	Tolerance on Percentage Passing (by mass)			
	Size 7	Size 10	Size 14	Size 20
37.5	Nil	Nil	Nil	Nil
26.5	Nil	Nil	Nil	Nil
19.0	Nil	Nil	Nil	±6
13.2	Nil	Nil	±6	±6
9.5	Nil	±6	±6	±6
6.70 - 4.75	±6	±6	±6	±6
2.36 - 0.600	±5	±5	±5	±5
0.300 - 0.150	±3	±3	±3	±3
0.075	±1.0	±1.0	±1.0	±1.0

Table 407.111: Maximum Material Storage, Mixing and Asphalt Discharge Temperatures

Material	Temperature °C (max)
Binder plant storage	185[1]
Aggregates before binder is added	200
Asphalt at discharge from asphalt plant	175

Note on Table 407.111
1. This limit may vary in accordance with the binder supplier's recommendations.

Table 407.131: RAP Grading and Binder Tolerances

Description	Tolerance	Allowable number of results outside of tolerance
Passing 26.5 mm sieve and larger	± 10	1 out of 5 consecutive results
Passing 4.75 mm to 19.0 mm sieve	± 8	1 out of 5 consecutive results
Passing 1.18 mm and 2.36 mm	± 6	1 out of 5 consecutive results
Passing 0.300 mm and 0.600 mm	± 5	1 out of 5 consecutive results
Passing 0.150 mm	± 3	1 out of 5 consecutive results
Passing 0.075 mm	± 2	1 out of 10 consecutive results
Binder Content (%)	± 0.5	1 out of 10 consecutive results

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Table 407.151 Frequency of Inspection and Testing

Checks Required	Minimum Frequency
Aggregates and Fillers	
Particle size distribution of each aggregate and sand component	Certification of compliance against asphalt manufacturers nominated particle size distribution is received for each delivery to the asphalt plant.
Particle size distribution glass fines	1000 tonnes
Unsound and marginal rock content	On each day, one per 500 tonnes or part thereof
Degradation Factor of fine aggregate components	2 500 tonnes
Plasticity Index of fine aggregate and natural sand supplied as unwashed sand	2 500 tonnes
Sand Equivalent of natural sand supplied as washed sand	2 500 tonnes
Flakiness Index of coarse aggregate 10 mm and larger	2 500 tonnes
Particle Density of all coarse and fine aggregate components	10 000 tonnes
Added fillers	2 500 tonnes
Binders	
Compliance against AS 2008 for bitumen	Certification of specification compliance for each delivery of bitumen supplied to the asphalt plant. Testing of viscosity at 60°C, at weekly intervals where bitumen has been stored above 150 °C for more than 28 days without the storage tank being topped up by more than 50% of its capacity. In cases where two or more bitumen classes are blended together at the asphalt plant, a viscosity test at 60°C shall be undertaken prior to use.
Compliance against ATS 3110 for PMBs	Certification of specification compliance for each delivery of PMB supplied to the asphalt plant.
RAP	
RAP Levels 1 and 2: Grading, Binder Content, & Moisture content	One set of tests on a representative sample of RAP for each 500 tonnes of RAP.
RAP Level 2 mixes: RAP binder viscosity characterisation	One test on representative sample of RAP for each 1000 tonnes lot of RAP.
Asphalt	
Scrutiny for segregation, uncoated particles, separated binder, excess binder or overheating before dispatch from the plant	Each loaded truck.
Degree of particle coating	As directed by the Superintendent
Temperature of asphalt before dispatch from the plant	Each loaded truck or at intervals of 15 minutes if more than one truck is dispatched in 15 minutes.
Binder Content and Full Sieve Analysis of Asphalt (full extraction test)	On each production day: One test per 250 tonnes or part thereof of the asphalt plant production on a representative sample taken from a delivery truck.
Maximum Density	On each production day for each asphalt type.
Viscosity of Recovered Bitumen at 25 °C	As directed by the Superintendent – the average of three tests where any asphalt mix containing unmodified bitumen is reasonably suspected of being over-heated or over-mixed.

Table 407.132: Binder blend Viscosity Range for the Specified Binder Class

Specified Binder Class	Binder Blend Viscosity Range (Pa.s @ 60°C)
C170	170 – 240
C320	320 – 500
C600	600 – 880

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Table 407.211: Maximum Grade of Temporary Ramping

Posted Speed Limit (km/h)	Maximum Ramp Grade (Horizontal to Vertical)
40	20 to 1
60	30 to 1
80	40 to 1
> 80	50 to 1

Table 407.171: Minimum Pavement Temperatures Prior to Laying Asphalt

Asphalt Type	Intermediate or Base Courses	Wearing Course
All asphalt with a specified binder class of C170 or C320	5°C	10°C
All asphalt with a specified binder class of C600 or containing a PMB	10°C	15°C

Table 404.142 Mean Density Ratio (less than six cores)

For layers less than 50 mm thickness	
Mean Value of the Density Ratio (Rm)	**Assessment**
97.5% or more	Accept lot
94.5% to 97.4%	Lot may be accepted at a reduced rate calculated by P = 10 Rm - 875

Table 407.271: Limits for Characteristic Density Ratio (Six Tests)

For layers less than 50 mm thick		For layers 50 mm thick or greater	
Characteristic Value of the Density Ratio (Rc)	**Assessment**	**Characteristic Value of the Density Ratio (Rc)**	**Assessment**
95.0% or more	Accept lot subject to no other nonconformances raised for the lot.	96.0% or more	Accept lot subject to no other nonconformances raised for the lot.
94.9% to 93.0%	Lot may be accepted at a reduced rate calculated by P = 15 R_c – 1325	95.9% to 94.0%	Lot may be accepted at a reduced rate calculated by P = 15 R_c - 1340
92.9% or less	Remove and replace asphalt	93.9% or less	Remove and replace asphalt

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