WAKA KOTAHI NZ TRANSPORT AGENCY	Downer	Construction Process: **Modified Basecourse Layer**	**Start RP**		**INSPECTION AND TEST PLAN - VERSION CONTROL**		**A**	**B**	**C**	**0 - IFC**
			Finish RP		Prepared by Pavement Designer:	PE name	dd/mm/yy			
		Project Name: **T2W - Tirau to Waiouru - Rehabilitation Works**			Reviewed by Construction Manager:	PM name	dd/mm/yy			
					Reviewed by Surf./ Pavmt Manager:	Surfacing or Pavement Manager	dd/mm/yy			
Client's Rep. : Neil Payne / Deena Tapara (Stellar Projects Ltd. (SPL)	**Contractor's Rep. : Wayne Bowden (CM) / Sid Rudani (PM)**	Specifications **NZTA M32 Specification For High Modulus Asphalt (EME 2); Note: Binder Specification for EME2 is in M/32**			Approved Quality Manager.:	Nominated by Group Quality Lead	dd/mm/yy			
					Approved by: Pavements SME.:	Responsible Group SME	dd/mm/yy			
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1.0. Pre-Commencement Activities													
1.1	Approved JMF for Asphalt Base or Wearing Course	JMF reference in here	H	Before Works commence	Confirm requirements are followed	JMF Validated in accordance with NZTA M/32:2021	Mix Design Report	Paving Contractor	JMF expiry date and validation details in here and to make sure the mix design is sent to Engineer's Representative for approval prior to paving on site.	A	I	R	
1.2	Site Conditions	Weather suitable, Site extents marked, surface suitable for paving (Depths/milling/cleanup complete etc), Environmental Controls in place	H	Before Works commence	Confirm requirements are followed	Weather conditions and Site is suitable for paving	Site Diary	Paving Contractor			I	R	
1.3	Roughness	Previous layer checked for suitability to achieve Specified Ride	H	Before Works commence	Confirm Specified Ride requirements can be met	Site is suitable for paving; The surface to be paved on must have a smooth longitudinal profile, and where a layer of Asphalt is to be placed over a previously constructed pavement layer, the ride quality must be confirmed with the observation of a holdpoint in the previous layer ITP.	NASSRA Report	Paving Contractor	Where FBS & Chipseal has been previously constructed ensure NASSRA is viewed and signed off as acceptable for paving. However, if no previous pavement done, roughness test will not be applicable.		I	R	
1.4	Traffic Loops	Communication with affected parties	H	Minimum of 7 days Before Works commence	Visual	Notify RC at least 7 days before surfacing is programmed	Communication	Paving Contractor	only required where existing traffic loops are present		A	R	
1.5	Paving Plan	Paving Plan to be completed	H	Before Works commence	NZTA M/32:2021 Clause 9.5.1	Paving Plan to be completed for each shift with dimensions, location and type of (hot/cold) joints, areas and tonnages, compaction plant (type/weight/no. of rollers) and established rolling pattern, production and transport plan including mix type (code), binder grade (with product name) to be ordered.	String Sheet Paving Plan Placement Trial Records	Paving Contractor			I	R	

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2.0. MANUFACTURE OF ASPHALT													
2.1	Temperatures	Mixing of aggregates and bitumen	M	Constant monitoring of temperature by calibrated equipment	Plant temperature probes	EME2 binder Mixing range 180 - 190°C NZTA M/32:2021 states max. 190 deg.C	Plant site diary	Asphalt Manufacturer		I	I	R	
2.2	Production Asphalt	Particle Size Distribution	M	1 per 200t at asphalt plant	NZS 4407 Test 3.8.1	NZTA M/32:2021 Refer to Table 5.3	IANZ accredited test cert	Asphalt Manufacturer		I	I	R	
2.3		Binder Content	M	1 per 200t at asphalt plant		NZTA M/32:2021 Individual Test Result: ± 0.5 Mean of Three Test Results: ± 0.3	IANZ accredited test cert	Asphalt Manufacturer		I	I	R	
2.4		Max. Specific Gravity (MSG) of mix	M	1 per 200t at asphalt plant		Report	IANZ accredited test cert	Asphalt Manufacturer		I	I	R	
2.5		Air Voids at lab design compaction	M	1 per 600t at asphalt plant		NZTA M/32:2021 Individual Test Results: +2.0, -1.0 Mean of Three Test Results: +1.2, -0.6	IANZ accredited test cert	Asphalt Manufacturer		I	I	R	
3.0. PLACING AND FINISHING													
3.1	Milling	Surface strung to ensure milling Depth is achieved	M	Before Asphalt placement commences	Confirm requirements are followed	Site is suitable for paving	String Sheet	Paving Contractor			I	R	
3.2	Proof Roll and Benkelman Beam Testing	Treatment of identified soft spot based on proof rolling and Benkelman Beam Testing	H	All identified soft spot	Proof roll/Benkelman Beam Testing	Refer to Pavement Rehabilitation Report under section 4.4 Pavement Contingency Measures	IANZ accredited test cert	Paving Contractor	Design specifications will be uploaded in CONQA.	I	I	R	
3.3	Tack Coat, OR	Application of Tack Coat	M	Per Lot	Dip bitumen emulsion tank before and after	Target Between 0.2l/m2 - 0.6l/m2 +/- 0.1l/m2 From Target Application Rate	Site Diary	Paving Contractor		I	I	R	
3.4	Membrane Seal	Application of Membrane Seal	M	Per Lot	Sealing Records	Application rate, chip type and binder as per membrane seal design	Sealing Records	Paving Contractor		I	I	R	
3.5	Temperature	Pavement Surface	M	Start of shift and every 1 hour until temperature rising	Infrared gauge	≥ 5°C for Structural, or as otherwise agreed with NZTA	Site diary	Paving Contractor	Must get NZTA approval if < 5°C for Structural	I	I	R	
3.6		Asphalt Delivery temperature	M	Every Load on delivery to the Paver Hopper	Temperature Probe	Target ≥ 170 deg.C. in the Paver Min. ≥ 150 deg.C in the Paver <150°C to be Rejected	Site Diary	Paving Contractor		I	I	R	
3.7		Compaction Temperature	M	During compaction	Temperature Probe/Infrared gauge	≥ 135°C at commencement of compaction. < 80°C - Stop Rolling	Site diary	Paving Contractor		I	I	R	

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3.8	Mat	Load Locate	M	Each load	M/32	Each load can be indentified to a location using a diagram. Record includes: - Truck ID/Rego/Driver - Depart Plant Time - Arrive Site Time - AC Temp on Arrival - Tonnage - Run Width - Estimated Run Length - Calculated Area - Calculated Average Depth	Paving Run Sheet	Paving Contractor		I	I	R	
3.9		Thickness Monitoring	M	Continuously	Dipping	Target Loose Thickness -0mm / +10mm		Paving Contractor		I	I	R	
3.1		Compaction - NDM	M	Plateau to be completed on 1st run, thereafter monitor compaction/roller passes to achieve target density.	Insitu density and air voids	NZTA M/32:2021 - section 9.8		Paving Contractor	Use a calibrated NDM with established core correlation. Locate and mark cores, record NDM Bulk density by core location (including any offset used).	I	I	R	
3.11		Compaction	H	Mat: 1 per 300m2/min. 8 per Lot Joint: 1 per 100m/min. 3 per Lot, In the event of a day's production being > 30t but < 2400m2, then it will be permissable to reduce the number of cores to; Mat: 1 per 300m2 with a minimum of 4 per Lot, and Joint: 1/100m with a minimum of 3 per Lot	Insitu density and air voids	NZTA M/32:2021 - section 9.8	IANZ accredited test cert.	Paving Contractor	A pavement lot shall be an essentially homogeneous section of work completed within a shift of production. The lot shall be divided into an appropriate number of approximately equal sub-lots and a core shall be taken randomly within each sub-lot. The Engineer or their delegate shall use a random method for locating each core position, such as ASTM D5361 or a similar process.	A	I	R	
3.12		Thickness	H	Average of 4 measurements per core	Measure Cores	LCV ≥ Specified Depth (Minimum) NZTA M/32:2021 - section 9.7	IANZ accredited test cert.	Paving Contractor		A	I	R	
3.13		Shape	M	Continuously	3m Straight edge	Where the length of the site or the geometry is such that a road roughness-measuring vehicle cannot be used then the straight edge can be used for checking the surface shape. Refer NZTA M/32:2021 - section 10. Not more than 5mm under a 3m Straight Edge.	Straight Edge Record	Paving Contractor		I	I	R	
3.14	Paving Quality	Texture	M	Per Site (If Required)	Sand Circle or HSD	NZTA T/10: 2013	IANZ accredited test cert.	Paving Contractor	Only required if EME will be the final wearing course or final road surface.	I	I	R	
3.15		Level	M	Per Site (If Required)	As Built Survey	The level at the top of each layer of EME 2 shall not be less than or more than 10mm higher than the specified level. NZTA M/32:2021 - section 10.1	Survey As builts	Paving Contractor	Only required if EME will be the final wearing course or final road surface.	I	I	R	
3.16		Alignment	M	Per Site (If Required)	As Built Survey	±50 mm from drawings NZTA M/32:2021 - section 10.2	Survey As builts	Paving Contractor	Only required if EME will be the final wearing course or final road surface.	I	I	R	

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3.17	Post Paving Completion Checks	Site clear and cleanup	W	Each Site/Shift	Visual	Site is cleared of plant (or parked in safe location) cleanup of all waste mix, paper and detritus is complete	Site Diary/Photo	Paving Contractor			I	R	
3.18		Pavement Marking	W	Each Site/Shift	Visual	Roadmarking is complete	Site Diary/Photo	Paving Contractor			I	R	
3.19		Cold Joint Bandaging	W	Each Site/Shift	Visual	Cold joint bandaging is complete	Site Diary/Photo	Paving Contractor			I	R	
3.20		Service Covers Checked	W	Each Site/Shift	Visual	Check that service covers are cleared and level with the pavement	Site Diary/Photo	Paving Contractor			I	R	
3.21		Traffic Loops Reinstated	W	Each Site/Shift	Visual	Check that affected traffic loops have been reinstated	Communication	Paving Contractor			I	R	

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4.0. As Built Records													
4.1	Assessment of all test results for conformity	Review against ITP Requirements	H	For each site on the project	Review	Reporting of any non-conforming results to Engineer via NCR	NCR	Paving Contractor		I	A	R	
4.2	RAMM pavement and surface records	RAMM surfacing pavement data spreadsheet updated	W	For each site on the project	Prepare Data	Over milled and Deep lift extents recorded and verified by Contract Engineer / QA Spray sheets for membrane area received by Contract Engineer from Sealing Team. Surfacing layer extents recorded and verified by Contract Engineer.	RAMM Spreadsheet	Paving Contractor		I	A	R	

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