Fulton Hogan	INSPECTION AND TEST PLAN	ITP No. 005	Doc ID: FH-SAT10-PM-ITP005
	Project:	**MAPMP - SAT10**	**Rev:** 02
	Construction Process:	Portland Cement Concrete (PCC) Pavements	Prepared By: Giuliano Follacchio
Client: Melbourne Airport	**Specification:**	Technical Specification - MAP MP - PCC Works, Stages 1, 2, 4 and 5 - Revision 1 - 08-Mar-2022	Approved By: Jordan Nicolaou
Contract No. CP18104	**Structure/Component:**		Date: 22/3/2022

Lot No. _____ Lot Details: _____ Lot Qty. _____ Date: _____

	Task/Activity Description	Inspection / Test					HP/ WP/ AP/ IP/ TP/ SCP	Responsibility	Checked by:		
		Frequency	Acceptance Criteria	Reference Documents	Inspection/ Test Method	Record of conformity			Client Rep	Fulton Hogan	Date
1.0	**Approval of Materials, Mix Design & Trials**										
1.1	Work Method & Sequence	Prior to the works	**Hold Point** Submission and approval of works method and sequence of works to avoid damage to existing and new concrete slabs prior to works commencing.	Clause 13.2	Verify	Aconex	**HP**	Engineer/ **Principal's Representative**			
1.2	Approval of Material Submissions	Prior to the works	**Hold Point** All materials used in the works are approved • Confirmation and approval of material Sources • Submit NATA certified test certificates for cement and flyash • Submit NATA certified test certificates for water • Submit Admixture details • Submit Curing Materials and methodology • Submit test certificates for nominated dowel bars • Submit material specification for nominated Epoxy Grout and joint sealant • Submit consolidated Material Sources Submission • Submission of reference samples (incl. 50kg of aggregate)	Clause 13.5.2.1 13.5.3 13.5.4 13.5.5 13.5.6 13.5.7 13.5.9 13.5.11 13.5.12 13.5.13.1 13.5.13.2	Verify	Aconex	**HP**	Engineer/ **Principal's Representative**			
1.3	Approval of Mix Design & Submission	Prior to the works	**Hold Point** • Submit Contractors construction procedure • Submission and approval of Mix Design • The Contract Administrator's acceptance of the concrete mix design report • Submission and approval of the Job Mix • Supply of concrete supplier certification • Submission and approval including receipt of calibration report	Clause 13.6.2 13.6.3 13.6.4 13.8.4.1 13.8.6	Verify	Aconex	**HP**	Engineer/ **Principal's Representative**			
1.4	Production Testing	As shown in acceptance criteria	**Hold Point** Submission of: • Job mix production tolerance • Concrete plant process control system • Test certificates for each batch of cement used in concrete production • Test certificates for water used in concrete production • Test certificates for each batch of admixtures used in concrete production • Production test results	Clause 13.8.7.3.1 13.8.8.2 13.8.8.3.3 13.8.8.3.4 13.8.8.3.5 13.9.3.7	Verify	Aconex	**HP**	FH Engineer/ **Principal's Representative**			

2.0	**Prior to Placing**										
2.1	Project Documentation/ Drawings	Prior to concrete pour	The latest revision of the project documentation/drawings sent to the subcontractors and reo supplier. The latest revision of the project documentation/drawings is being used on site (check the drawings register) TMP and EMP in place for pour.	Drawing and drawing registers	Verify	Up to date drawing sets and this ITP signed	HP*	Engineer			
2.2	Implementation of all measures and controls	Prior to concrete pour	All necessary measures and controls are being implemented, that is: PSP, EMP, TMP, JSEA, SWMS & WP.	PSP, EMP, TMP, JSEA, SWMS, WP	Verify	Site and Office Inspection	HP*	Engineer/ Site Supervisor			
2.3	Definition of the work area (survey)	Prior to concrete pour	Work area has been cleared and surveyed (marked on site)	Drawings	Verify	Site Inspection	HP*	Site Supervisor/ Surveyor			
2.4	Construction Procedure	Prior to concrete pour	**Hold Point** Submit contractor's construction procedure	Clause 13.10.1	Verify	Aconex	**HP**	Engineer/ **Principal's Representative**			
2.5	Placement Plan	Prior to concrete pour	**Hold Point** Submit Pour Plan for review	Clause 13.10.2	Verify	Aconex	**HP**	Engineer/ **Principal's Representative**			
3.0	**Construction and Formwork**										
3.1	Base Inspection	Prior to Concrete pour	**Witness Point** Ensure that the finished surface of the sub grade has been surveyed and is to level. ITP002 has been completed. Ensure Principals Representative conforms base is satisfactory.	Clause 13.10.5.1	Verify	Site Inspection, ITP002	**WP**	Engineer/ **Principal's Representative**			
3.2	Formwork Installation	4 hours Prior to Pour	**Witness Point** Rigid, watertight, braced and tied together as to maintain shape during all construction activities. Forms must be free from warps, bends and kinks. Formwork has been surveyed and is to the required level.	Clause 13.10.4	Inspect	Site Inspection	**WP**	Engineer/ **Principal's Representative**			
4.0	**Pre Pour Planning and Inspections**										
4.1	Plant Verification Checklist	Prior to concrete pour	**Witness Point** Verify plant fully complies with the requirements of the Specification and is in full working order.	Clause 13.4.1	Inspect	Site Inspection	**WP**	Engineer/ **Principal's Representative**			
4.2	Formwork Inspection	Prior to concrete pour	**Hold Point** Inspection of formwork at least one day prior to the commencement of works	Clause 13.4.2.1	Inspect	Site Inspection & CL009A	**HP**	Engineer/ **Principal's Representative**			

4.3	Reinforcement Inspection	Prior to concrete pour	Pre-pour Checklist Completed: • Position and spacing check and recorded • Cover checked and recorded (top 100mm +/- 10mm, joints 50mm +/- 10mm) • Reinforcing supports checked and recorded • Reinforcement overlapping by 300mm or securely fastened to prevent separation • Reinforcement shall be free from mud, oil and other organic matters	Drawings Clause 13.10.8	Inspect	Site Inspection & CL009A	HP*	Engineer			
4.4	Stringline and tape measure checks	Prior to concrete pour	The base of the pour shall be tested via stringline and tape measure to investigate correct depths & shall be corrected as necessary.	Clause 13.10.5.3	Verify	Site inspection and this ITP signed	HP*	Engineer			
4.5	Pre-pour inspection	Prior to concrete pour	**Witness Point** The area in which concrete is proposed to be placed must be inspected and checked immediately prior to commencement of placing	Clause 13.10.7	Inspect	Notification and this ITP Signed	**WP**	Engineer/ **Principal's Representative**			
4.6	Check the weather forecast	Prior to concrete pour	Check weather forecast for unfavourable conditions - rain, cold or hot weather. To be checked the day before and immediately prior to confirmation of batching concrete.	Clause 13.10.12.1	Inspect	This ITP Signed	IP	Engineer			
5.0	**Placing Concrete**										
5.1	Sampling concrete	Each concrete pour	Sampling in accordance with MAPMP Specification. **BEAMS** • 7 Days – 2 beams every 75m3 or part thereof • 28 Days – 2 beams per 75m3 or part thereof **SLUMP** • Slump to be performed on every truck (50mm for hand placed concrete +/- 10mm **AIR CONTENT**, **MASS PER UNIT** Air Content test (3% – 5%) to be performed on first two trucks, and each 75m3 thereafter. Mass per unit volume test is to be performed once per lot. All tests taken to be recorded in **CL 009B - Concrete Pour Record Sheet** Check Number of tests taken during the shift / lots conforms to the testing criteria. (Beams cast, stored and secure).	Clause 13.9	Test and Verify	This ITP signed & CL009B	IP	Engineer			
5.2	Place Concrete	Each concrete pour	Discharge time must be < 90 minutes (with a target of 60 minutes) from batch time. Concrete must be poured at a rate greater than 20m3 per hour. Concrete must not be dropped from higher than 1m Ensure there are no breaks greater then 60min between	Clause 13.10.7 **CL009B**	Verify	This ITP signed	IP	Engineer			

			concrete placement. All delivery times to be recorded in **CL 009B - Concrete Pour Record Sheet**								
5.3	Hot Weather Requirements Met	Each concrete pour	No concrete can be poured if air or concrete temperature exceeds 30°C without Principal's Representatives approval.	Clause 13.10.12.2	Verify	This ITP signed & CL009E	IP	Engineer			
5.4	Cold Weather Concreting	Each concrete pour	Concrete shall not be placed when the ground temperature is below 5°C unless precautions are in place. Concrete shall not be placed when the temperature of the concrete mix is below 10°C unless approved FH to confirm temperature on site prior to pouring.	Clause 13.10.12.3	Verify	This ITP signed & CL009E	IP	Engineer			
5.5	Recording Pour Location	Each concrete pour	Pour location recorded on plan at the completion of pouring each lot – **CL 009C**. Include progress with times.	**CL009C**	Verify	This ITP signed & CL009C	IP	Engineer			
5.6	Evaporation Rate	Each Concrete Pour	Evaporation rate recorded every half hour. If evaporation rate is >= 1kg/m2/h works must cease and a transverse construction joint installed	Clause 13.10.12.1 **CL009E**	Verify	This ITP signed & CL009E	IP	FH Engineer			
5.7	Surface finish	Each Concrete Pour	Concrete to be shall comprise traverse finishing, longitudinal straight-edge finishing, floating and then broom finishing, in that order. Brooming shall be in a direction at right angles to the direction of the placing of the concrete.	Clause 13.11.2.6	Verify	Site Inspection	IP	Foreman			
6.0	**Post Placement**										
6.1	Curing	Each concrete pour	Concrete to be wet cured for a minimum of 7 days. Initial Curing shall commence immediately after finishing operations have been completed. Moist curing to commence as soon as possible after finishing. This will be wetted hessian mats covering the pour. The mats shall overlap to ensure sufficient coverage. Mats shall be kept saturated for not less then 7 days. Curing methods and details shown on post pour checklist **CL009D**. Details to be recorded in **CL 009D**	Clause 13.10.11 **CL009D**	Verify	Site inspection & CL009D	IP	Engineer			
6.2	Cold Weather/Wind Concrete Protection	Each concrete pour	In the event where the air temperature is below 10ºC or the completed pavement is expected to be exposed to freezing conditions, concrete placing must only take place with the prior approval of the Contract Administrator.	Clause 13.10.12.3	Verify	Site Inspection	IP	Engineer/**Principal's Representative**			
6.3	Inducement Saw Cutting	Each concrete	Initial 3mm-5mm wide x 207mm (Type A) or 155mm (Type C) deep saw cuts to be carried out as soon as possible. Details recorded on post pour checklist **CL**	Clause 13.10.13.6.1	Verify	Site inspection & CL009D	IP	Foreman or Engineer			

		pour	**009D.**	**CL009D** Drawings							
6.4	Formwork Removal	Each concrete pour	Formwork may only be removed after a minimum of 12 hours after concrete placement. Details to be recorded in **CL 009D.**	Clause 13.10.15	Verify	Site inspection & CL009D	IP	Foreman			
6.5	Positional Tolerance and dimensions of concrete (finished surface levels)	Each lot	Survey done and report prepared: +5mm, -5mm tolerance from design required. Dimensions within the tolerances – details recorded within **CL009D.**	Clause 13.11.2.1 **CL009D**	Inspect	Survey & CL009D	SCP	Engineer/Survey/ /**Principal's Representative**			
6.6	Pavement Density	Each Lot	DENSITY • Core (120mm dia x full pavement depth) to be cut and tested for density. Frequency • 6x cores per lot. The rate of coring may be revised after the first four (4) lots are completed.	Clause 13.11.2.3 13.11.2.4	Test and Verify	Test Report	IP	Engineer			
6.7	Surface Smoothness Testing	Each lot	**Hold Point (if required)** The surface smoothness of the finished surface shall be checked using a straight mobile edge, and the minimum of the finished surface is that it shall not deviate from the testing edge of a 3.5 m straight edge by more than 5 mm. Any deviations greater than the tolerance a hold point shall be installed	Clause 13.11.1.2 **CL009F**	Inspect	Site inspection & CL009F	**HP**	Engineer/ **Principal's Representative**			
6.8	Defects in the concrete	Stripping of Forms	Check for any non-conforming or defects (cracks) in the concrete slabs. Any locations identified to be recorded in the post pour checklist - **CL 009D.**	Clause 13.11.1	Inspect and Verify	Site inspection & CL009D	IP	Engineer			
6.9	Spalling or honeycombing	Stripping of Forms	Check for spalling or honeycombing during and after curing of the concrete slabs. (Must be less than 5% of surface area). Any locations identified to be recorded in the post pour checklist - **CL 009D.**	Clause 13.11.2.5	Inspect and Verify	Site inspection & CL009D	IP	Engineer			
6.10	Protection of Concrete Pavement	Each Lot	Concrete pavement not to be trafficked until 7 days old or early strength results are obtained (3.2MPa min) Steel tracked or wheeled equipment is not to be used	Clause 13.10.16	Verify	Test Report	IP	Engineer			
6.11	Concrete Test Results	Each concrete Pour	All concrete test results obtained and attached to ITP. All concrete test results submitted on Aconex Check results of concrete tests are compliant as per specifications (e.g. graphical plots, Analysis of Flex. Strengths)	Clause 13.9.3.7	Verify	Test Report	IP	Engineer			
6.12	Post-Pour Checklist	Each concrete pour	**CL 009D** – Post-pour Checklist completed and signed.	**CL 009D**	Verify	CL009D	HP*	Engineer			

LEGEND:			
	HP	HOLD POINT	Work shall not proceed past the HP until released by the Principal's Representative
	HP*	FULTON HOGAN INTERNAL HOLD POINT	Work shall not proceed past the HP* until released by Fulton Hogan
	WP	WITNESS POINT	An inspection point that may be witnessed by the Principal's Representative
	AP	APPROVAL POINT	Written or verbal approval given by the Principal's Representative
	IP	INSPECTION POINT	Formal Inspection activity to be undertaken and recorded
	TP	TEST POINT	Product compliance test to be undertaken and recorded/reported
	SCP	SURVEY CONFORMANCE POINT	A qualified surveyor to check product/section/structure and report

FINAL INSPECTION: FULTON HOGAN

On behalf of Fulton Hogan it is hereby certified that the Works represented by the items of work listed have been tested in accordance with the Project Quality Plan and conform in all respects with the requirements of the Contract.

Print Name: _____ Position: _____

Signature: _____ Date: _____