

		INSPECTION AND TEST PLAN		ITP No. 005	Doc ID: FH-SAT10-PM-ITP005
		Project:	MAPMP - SAT10		Rev: 01
		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 0 - 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	Approval of Mix Design & Submission	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 Mix Design & Submission	Prior to the works	Hold Point All materials used in the works are approved <ul style="list-style-type: none">Confirmation and approval of material SourcesSubmit NATA certified test certificates for cementSubmit NATA certified test certificates for waterSubmit Admixture detailsSubmit Curing Materials and methodologySubmit test certificates for nominated dowel barsSubmit material specification for nominated Epoxy GroutSubmit consolidated Material Sources Submission	Clause 13.5.2.1 13.5.2.3 13.5.5 13.5.6 13.5.9 13.5.12 13.5.13.1	Verify	Aconex	HP	Engineer/ Principal's Representative			
1.3	Approval of Mix Design & Submission	Prior to the works	Hold Point <ul style="list-style-type: none">Submit Contractors construction procedureSubmission and approval of Mix DesignThe Contract Administrator's acceptance of the concrete mix design reportSubmission and approval of the Job MixSupply of concrete supplier certificationSubmission 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	Joint Sampling	From acceptance of Job Mix Formula	Hold Point From acceptance of the Job Mix Formula samples of aggregate and 10kg sample of cement will be taken. Half will be kept by the contractor and half by the Principles Representative.	Clause 13.5.13.2	Verify	Aconex	HP	Engineer/ Principal's Representative			

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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	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	Reinforcement Inspection	Prior to concrete pour	Pre-pour Checklist Completed: <ul style="list-style-type: none">Position and spacing check and recordedCover checked and recorded (top 100mm +/- 20mm, joints 50mm +25mm, -0)Reinforcing supports checked and recordedReinforcement overlapping by 300mm or securely fastened to prevent separationReinforcement shall be free from mud, oil and other organic matters	Drawings Clause 13.10.8	Inspect	Site Inspection & CL009A	HP*	Engineer			

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4.2	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			
4.3	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			
4.4	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) testing reduced to every 2nd truck after 5 days of pours if tests are consistent and within tolerance. (approval to be provide by Principal's Representative prior to reduction) 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 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 concrete placement.	Clause 13.10.7 CL009B	Verify	This ITP signed	IP	Engineer			

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			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 than 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	Each concrete	In the event where the air temperature is below 10°C or the completed pavement is expected to be	Clause	Verify	Site Inspection	IP	Engineer/ Principal's			

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	Concrete Protection	pour	exposed to freezing conditions, concrete placing must only take place with the prior approval of the Contract Administrator.	13.10.12.3				Representative			
6.3	Inducement Saw Cutting	Each concrete pour	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 009D .	Clause 13.10.13.6.1 CL009D Drawings	Verify	Site inspection & CL009D	IP	Foreman or Engineer			
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			
6.6	Pavement Density	Each Lot	DENSITY <ul style="list-style-type: none"> Core (120mm dia x full pavement depth) to be cut and tested for density. Frequency <ul style="list-style-type: none"> Minimum of 2 cores per lot (<=150m3) 1 additional core per 75m3 or part thereof Maximum of 4 cores per lot 	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			

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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: _____