Fulton Hogan	INSPECTION AND TEST PLAN	ITP No. 009	Ref. Doc: WP 009
	Project:	**MELBOURNE AIRPORT – Taxiway Zulu Program**	Rev. 05
	Construction Process:	Portland Cement Concrete (PCC) Pavements	Prepared By: Faiyaaz Ahmed
Client: Melbourne Airport	**Specification:**	Jacobs – Taxiway Zulu Program – Works Specification - CP14038-AIR-DET-PM-SP-0002 | Rev 5	Approved By: Vinny Tran
Contract No. CP14038	**Structure/Component:**		Date:04/06/2022

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	At least 28 days prior to trials	All submission sent through Aconex and approved by Principle's Representative • Mix formulas submitted and approved • Reference samples provided to Principal's Representative • Material certificates provided • Batch plant Inspection • Mixer uniformity tests and submissions • All WP and ITPs submitted and approved	Clause 6.3.2 6.5.2 6.5.4	Verify	Aconex	**WP/ HP**	Engineer/ **Principal's Representative**	Aconex Ref: FHPL-TRANSMIT-000045, FHPL-TRANSMIT-000057, DCWC Mgt-PMA-000339, DCWC Mgt-PMA-000435, FHPL-GCOR-000489		
1.2	Joint Sampling	7 Days from acceptance of Job Mix Formula	**Witness Point** Within 7 days of acceptance of the Job Mix Formula a 80kg sample of aggregate and 10kg sample of cement will be taken. Half will be kept by the contractor and half by the Principle's Representative.	Clause 6.6.5	Verify	Aconex	**WP**	Engineer/ **Principal's Representative**	Aconex Ref: DCWC Mgt-PMA-000534		
1.3	Airfield Construction Procedure	At least 28 days prior to trials	**Hold Point** Airfield Construction Procedure sent through Aconex and approved by the Principal's Representative	Clause 6.4	Verify	Aconex	**HP**	Engineer/ **Principal's Representative**	Aconex Ref: DCWC Mgt-PMA-000435		
1.4	Production Trial	At least 48 days prior to Concrete Pour	**Witness Point** Attendance at Production Trial given at least 14 days calendar notice to Principle's Representative	Clause 6.6.1	Verify	Aconex	**WP**	Engineer/ **Principal's Representative**	Aconex Ref: FHPL-GCOR-001118		0/10/2019
1.5	Construction Trial	Prior to Concrete Pour	**Witness Point** Attendance at Construction Trial given at least 14 days calendar notice to Principle's Representative	Clause 6.6.1	Verify	Aconex	**WP**	Engineer/ **Principal's Representative**	Aconex Ref: FHPL-GCOR-001118		10/10/2019
1.6	Test Panel Inspection	Prior to Concrete Pour	**Witness Point** 5 no. of 1x1m Test Panels are to be broomed to different depths and the depths to be used confirmed by the Principal's Representative on Aconex	Clause 6.6.2	Verify	Aconex	**WP**	Engineer/ **Principal's Representative**	Aconex Ref:DCWC Mgt-PMA-000873		
1.7	Production Trial Report	Prior to Concrete Pour	**Hold Point** Production Trail undertaken at concrete plant and tests as per specification undertaken.	Clause 6.6.4 6.6.3.3	Principal's Representative Approval via Aconex	Aconex	**HP**	Engineer/ **Principal's Representative**	Aconex Ref: DCWC Mgt-PMA-001717		4/02/2020

1.8	Construction Trial Report	Prior to Concrete Pour	**Hold Point** Construction Trial undertaken and results provided to Principal's Representative	Clause 6.6.4 6.6.3.3	Principal's Representative Approval via Aconex	Aconex	**HP**	Engineer/ **Principal's Representative**	Aconex Ref: DCWC Mgt-PMA-001717		4/02/2020
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	7 Days prior to Concrete pour	**Hold Point** 7 Days prior to concrete pour a plan with the proposed pour lanes is to be submitted	Clause 6.7.2.8	Verify	Aconex	**HP**	Engineer/ **Principal's Representative**			
2.5	Placement of concrete against existing concrete slabs	Prior to coring/drilling existing concrete slab	The Principal's Representative shall be notified of the Contractors intention to core or drill dowels into existing concrete face	Clause 6.7.2.1	Inspect	Site Inspection	**WP**	Engineer/ **Principal's Representative**			
3.0	**Construction and Formwork**										
3.1	CMCR Inspection	1 day prior to pour	Ensure that the finished surface of the CMCR has been surveyed and is to level. ITP008 has been completed.	Clause 6.7.2.2.	Verify	Site Inspection, ITP008	IP	Engineer			
3.2	Formwork Installation	4 hours Prior to Pour	Rigid, watertight, braced and tied together as to maintain shape during all construction activities. Forms must be free from warps, bends and kinks and the top edge of the form not vary from a straight edge by more than +/- 3mm in 3m. Formwork has been surveyed and is to the required level.	Clause 6.7.2.9 6.7.5.1	Inspect	Site Inspection	**HP**	Engineer/ **Principal's Representative**			
3.3	Pre-pour survey	Prior to concrete pour	A pre-pour survey of the formwork carried out by a surveyor. Surveyor set out and checked forms. Alignment and grade elevation shall be checked Erected formwork within the tolerance.	WP 009	Inspect	Site Inspection & Survey Reports	SCP	Surveyor			

4.0	**Pre Pour Planning and Inspections**										
4.1	Reinforcement Inspection	Prior to concrete pour	Pre-pour Checklist Completed: • Position and spacing check and recorded • Cover checked and recorded (top 125mm +/- 10mm, edge 75mm +/- 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 6.7.2.10	Inspect	Site Inspection & CL009A	HP*	Engineer			
4.2	Scratch Template	Prior to concrete pour	**Hold Point** The base of the pour shall be tested with approved template to investigate correct depths & shall be corrected as necessary	Clause 6.7.2.1	Verify	Site inspection and this ITP Signed	**HP**	Engineer/ **Principal's Representative**			
4.3	Pre-pour inspection	Prior to concrete pour	The Principal's Representative shall be notified of the Contractors intention to place concrete within a lot.	Clause 6.7.2.1	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 6.7.2.4	Inspect	This ITP Signed	IP	Engineer			
5.0	**Placing Concrete**										
5.1	Sampling concrete	Each concrete pour	**Hold Point** Sampling in accordance with Zulu Specification. BEAMS – First 5 Lots • 7 Days – 2 beams per 75m3 or part thereof • 28 Days – 2 beams per 75m3 or part thereof BEAMS – After 5 Lots • 7 Days – 2 beams every second 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, MASS PER UNIT AND WASH GRADING • Air Content test (3% – 5%), mass per unit volume	Clause 6.8.9 6.8.10 **CL009B**	Test and Verify	This ITP signed & CL009B	IP	Engineer			

			and a wash grading 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).								
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 10 lineal meters per hour. Concrete must not be dropped from higher than 1m Ensure there are no breaks greater than 30min between concrete placement. All delivery times to be recorded in **CL 009B - Concrete Pour Record Sheet**	Clause 6.7.2.4 **CL009B**	Verify	This ITP signed	IP	Engineer			
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 6.7.2.6	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 Concrete shall not be placed when the temperature of the concrete mix is below 10°C FH to confirm temperature on site prior to pouring. In the event that PCC pavements are poured when the air temperature, aggregates or water is below 10ºC or the completed pavement is expected to be exposed to freezing conditions the pavements must be protected with insulation coverings (plastic/ bubble wrap) during the first 72 hours of curing to maintain a minimum temperature of 10°C.	Clause 6.7.2.7	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 hour 0-0.8kg/m2/hr or every 15min int 0.8-0.9kg/m2/hr. If evaporation rate is >= 1kg/m2/h works must cease and a transverse construction joint installed	Clause 6.7.2.4 **CL009E**	Verify	This ITP signed & CL009E	IP	FH Engineer			
5.7	Surface finish	Each Concrete Pour	Concrete shall comprise of transverse finishing, longitudinal straight-edge finishing, floating and then broom finishing, in that order.	Clause 6.7.3.3	Verify	Site Inspection	IP	Foreman			

			Brooming shall be in a direction at right angles to the direction of the placing of the concrete.	6.7.3.4							
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 6.7.4 **CL009D**	Verify	Site inspection & CL009D	IP	Engineer			
6.2	Cold Weather/Wind Concrete Protection	Each concrete pour	In the event that PCC pavements are poured when the air temperature is below 10ºC or the completed pavement is expected to be exposed to freezing conditions the pavements must be protected with insulation coverings (plastic/ bubble wrap) during the first 72 hours of curing to maintain a minimum temperature of 10°C. Details recorded on checklist **CL 009H.**	Clause 6.7.2.7	Verify	Site Inspection & CL009H	IP	Foreman or Engineer			
6.3	Inducement Saw Cutting	Each concrete pour	Initial 3mm wide x 150mm deep saw cuts to be carried out as soon as possible. Details recorded on post pour checklist **CL 009D.**	Clause 6.7.5.2 **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 6.9.9	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 6.7.2.9 **CL009D**	Inspect	Survey & CL009D	SCP	Engineer/Survey			
6.6	Pavement Density	Each Lot	DENSITY • Core (120mm dia x full pavement depth) to be cut and tested for density. Frequency • Minimum of 2 cores per lot (<=150m3)	Clause 6.9.6	Test and Verify	Test Report	IP	Engineer			

			• 1 additional core per 75m3 or part thereof • Maximum of 4 cores per lot								
6.7	Surface Smoothness Testing	Each lot	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.	Clause 6.9.10 **CL009F**	Inspect	Site inspection & CL009F	**WP**	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 6.9.8	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 6.9.7	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 6.7.6	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 (eg graphical plots, Analysis of Flex. Strengths)	Clause 6.9.4	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			
6.13	Surface Texture	1 per 500m2	Surface texture measured 1 test per 500m2	Clause 6.9.11 **CL 009D**	Verify	Test Report	IP	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: _____