

Client: Melbourne Airport (APAM)

Contract No: CP14038

Prepared By: Marianne Sales

Project: Taxiway Zulu 2.0 Project

Reviewed By: Jonathon Rock

Date: 26/03/2024

Construction Process: Lime Stabilisation Subgrade

Approved By: Jonathon Rock

Date: 26/03/2024

Specifications: Taxiway Zulu 2.0 Program Works Specification ZULU-BECA-002-SPC-00002[C01]

Structure / Component: Subgrade

Lot No:				Lot Details:				Lot size/Quantity:				Date:			
Item No.	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			Principles Rep	Fulton Hogan	Other	Date			
1.0	Preliminary Activities – Permits, Documentation, Approvals, Materials and Trials														
1.1	Check for correct documentation	Prior to commencing works	Current revision drawing is being used including the subcontractors copy. Current Revision to be obtained via Aconex	Aconex	Visual Inspection	This signed ITP	HP*	Project/Site Engineer							
1.2	Implementation of all measures and controls	Prior to commencing works	All necessary measures and controls are being implemented, that is: PSP, EMP, TMP, SWMS & WP	PSP, EMP, TMP, WP SWMS,	Visual Inspection	This signed ITP	HP*	Project/Site Site Supervisor							
1.3	Current excavation permit	Prior to commencing works	An Excavation Permit and an Isolation permit issued by Melbourne Airport. Fulton Hogan Excavation permit issued to plant operators.	Excavation Permit	Visual Inspection	Permits	HP*	Project/Site Foreman							
1.4	Preceding Lots Satisfactory	Prior to commencing works	Review ITP004 (Select Fill placement) and ITP003 (Stripping and bulk out) has been completed to a satisfactory level	ITP004, ITP003	Visual Inspection	This signed ITP	HP*	Project/Site Engineer							
1.5	Test Pits	Prior to commencing works	Test Pits have taken for the works area and suitable lime content parameters have been established. Test Pits should be taken at least one month prior to works beginning	WMS003 – cl3.1.9	Visual Inspection	This signed ITP	HP*	Project/Site Engineer							
1.6	Stabilised Lime Content	Prior to commencing	Stabilised Lime subgrade material shall have a minimum of lime content of 4% and a specified minimum strength of 20% CBR after 7 days of curing.	Spec cl. 3.3	Testing	Test results & This ITP signed	HP	Project/Site Engineer Principal's Representative							
1.7	Stabilised Soil Trial	Prior to commencing	Trial of the Lime Stabilised Subgrade is greater than 500m² to demonstrate that the Subgrade is able to meet the required specification. If trial is approved and accepted by Principal's Representative. Tried Lime Stabilised Subgrade will form the completed Works.	Spec cl. 3.6	Verify	This ITP signed	HP	Project/Site Engineer Principal's Representative							

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			Principal's Representative to approve trial before commencing Lime Stabilised Subgrade placing.									
2.0	Subgrade Preparation & Replacement											
2.0	Pre-treatment of earthworks	Each Lot	<ul style="list-style-type: none"> Inspect subgrade that will require lime stabilisation. Subgrade that is excessively wet and/or contains rocks greater than 60mm to 100mm, subgrade will need to be removed and replaced with site won material. No testing or proof rolls required on replaced subgrade Survey to for any excessive high and/or low spots. Fill / excavate spots as required. 	WMS008 – cl 3.2.1	Verify	This signed ITP	IP	Project/Site Engineer				
2.1	Rip Subgrade	Each Lot	Prior to spreading lime, the subgrade is to be ripped and pulverised to at least 300mm to 400mm	Cl3.7	Verify	This signed ITP	IP	Project/Site Engineer				
3.0	Layer Placement											
3.1	Layer Parameters	Each Lot	Summary of Layer Parameters: <ul style="list-style-type: none"> A Lot is defined as one days production Min depth of 300mm for PT01, PT03, PT08 Min Depth of 400mm PT02 Shape: <12mm over a 3m straight edge Surface Level: -25mm to +0mm 	Cl 3.16	Verify	This signed ITP	IP	Project/Site Engineer				
3.2	Prior to Works Starting	Each Lot	Check weather forecast for rain and wind. Works to not beginning if rain is imminent. Works must not start or cease if wind increase over 15 knots	Cl3.7	Verify	This signed ITP	IP	Project/Site Engineer				
3.3	Spreading of Lime	Each Lot	Lime to be spread uniformly over the prepared surface at the Lime spreading rate calculated.	Cl3.7	Verify	This signed ITP	IP	Project/Site Engineer				

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3.4	Spreading of Lime	Once Per Hour	Lime spread to be checked every hour and shall be with +/- 5% of the specified amount. An area to be checked is required to be 1x1m2.	CI3.7	Verify	TP	IP	Project/Site Engineer				
3.5	Mixing	Each Lot	All lime to be mixed to the specified depth within 8 hours of spreading. Mixing passes to overlap to ensure subgrade is mixed twice as a minimum.	CI3.8	Verify	This signed ITP	IP	Project/Site Engineer				
3.6	Mixing	Once Per Hour	Approximately every hour, mixing plant will record the depth of application to check compliance with the specification (300mm or 400mm).	CI3.8	Verify	TP	IP	Project/Site Engineer				
3.7	Joints	Each Lot	Construction Joints when required, will be placed to ensure no single plane of weakness. Construction joints of adjacent lots will: <ul style="list-style-type: none"> Longitudinal Joints – Will be avoided by overlapping adjacent lime stabilisation mixing runs. Traverse Joints – Will be staggered to avoid forming a single joint. 	CI3.13	Verify	This signed ITP	IP	Project/Site Engineer Foreman				
3.8	Compaction	Each Lot	After satisfactory mixing, compaction shall commence within two hours and be finished within eight hours of mixing completion. Additional moisture may be added if required.	CI3.11	Verify	This signed ITP	IP	Project/Site Engineer				
3.9	Trimming	Each Lot	Surface to be trimmed to +0mm, -25mm	CI3.11	Verify	This signed ITP	IP	Project/Site Engineer				
3.10	Protection	Each Lot	As soon as lime stabilisation activities start, no construction plant to travel across works zone (other than those involved in the operation for 48 hours minimum.	CI3.15	Verify	This signed ITP	IP	Project/Site Engineer				

		Inspection and Test Plan - Control and Supervision of the Works			Doc ID: FH-ZU2-QU-ITP008 Rev: A	
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3.11	Curing	Each Lot	Curing shall commence as soon as practical. The curing period is 48 hours or until the succeeding layer is placed.	CI3.15	Verify	This signed ITP	IP	Project/Site Engineer				
4.0	Acceptance – Lime Stabilisation											
4.1	Proof Roll	Each Lot	Following completion of the curing period, detailed trim and survey conformance, the Principle's Representative will be invited to a proof roll (24 hours notice). Proof roll will be accepted if no rutting greater than 25mm is observed. Proof roll will involve using a heavy vibrating roller (in static mode)	3.12	Verify	This signed ITP	HP WP HP	Project/Site Engineer Principle's Representative				
4.2	Surface Smoothness	Each Lot every 10m	Long straight edge surface not to deviate by more than 12mm over a 3m long straight edge, following subgrade treatment	3.16	Verify	This signed ITP Results Attached	TP	Project/Site Engineer				
4.3	Strength Testing (CBR)	Each Lot	To exceed 20% CBR after 7 days. Test every 1500m2 for first 3 consecutive conforming Lots; then every 3,000m2 or part there of. Maximum 3 tests per lot.	3.16	Verify	This signed ITP Results Attached	TP	Project/Site Engineer				
4.4	Field Dry Density	Each Lot	Maximum Dry Density used is lime stabilised subgrade 90%. 500m2 for first 3 consecutive conforming Lots; then every 1000m2 or part there of. Maximum 4 test per Lot	3.16	Verify	This signed ITP Results Attached	TP	Project/Site Engineer				
4.5	Surface Level	Each Lot	Stabilised and compacted subgrade surface layer to comply within -25mm to +0mm from specified levels.	3.16	Verify Report	This signed ITP Results Attached	SCP	Project/Site Engineer				

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Final Inspection:			
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: / /

Legend:					
HP	Hold Point	Work shall not proceed past the HP until released by the Principal's Representative	IP	Inspection point	Formal Inspection to be done and recorded
HP*	Fulton Hogan Hold Point	Work shall not proceed past the HP* until released by Fulton Hogan	TP	Test Point	Product compliance test to be undertaken and recorded/reported
WP	Witness Point	An inspection which must be witnessed by the Principal's Representative	SCP	Survey conformance point	A qualified surveyor to check product/section/structure and report
AP	Approval Point	Written or verbal approval given by the Principal's Representative			
Notes					