

Summerhill Estate Stage 7

GITA Inspection Verification Report

Prepared For:	Streetworks Pty Ltd
Report Number	P20326A V2
Version Release Date	20 January 2021
Report Released By	C Caulfield
Title	Project Manager
Signature	Glauffeld

Signature

Our Head Office 47 National Ave Pakenham, VIC 3810 **Our Laboratories** Pakenham 03 9769 5799 Deer Park 03 8348 5596 Bibra Lake 08 9395 7220

TERRAFIRMALABS.COM.AU Template V8, 26/06/2019 Page 1 of 6



Your Worksite is Our Laboratory.

Table of Contents

1	Int	roduction	3
2	Sco	ope of Work	3
	2.1	Area of Work	3
	2.2	Specification	3
	2.3	Limitations	4
3		nstruction Method	
	3.1	Subgrade Preparation	5
	3.2	Fill Placement	5
4	Сог	nstruction Verification	5
5	Sta	atement of Compliance	6

Appendices

Appendix 1 Test Location Plan

Appendix 2 Compaction Test Register and Test Certificates



1 Introduction

Terra Firma Laboratories was engaged by *Streetworks Pty Ltd* as the Geotechnical Inspection and Testing Authority (GITA) to provide Level 1 supervision and testing works on the earthworks component for Summerhill Estate Stage 7. This work was conducted over the period of 20/08/2020 to 4/09/2020.

This report presents that the allotment earthworks was carried out in accordance with AS3798-2007 *Guidelines for Earthworks for Commercial and Residential Development* and in compliance with the compaction control specifications established by the contractor.

2 Scope of Work

2.1 Area of Work

The areas of work included Lots 701, 702, 703, 706, 709, 710, 711, 714, 715, 716, 720, 721, 722 and 723. The site will be a residential development.

The area on which fill was placed is shown on site plan (Appendix 1: *Test Location Plan*) based on drawings prepared by GPR Consulting Pty Ltd, drawing reference 0099-07-R02 and provided by *Streetworks Pty Ltd.*

The supervision work by the GITA involved both inspection of sub grade preparation work and full time inspection and testing of fill placement.

2.2 Specification

The technical specification (Reference from Drawings) for compaction control requirements was provided by Streetworks Pty Ltd and established that:

Test Rolling is required for all layers of structural fill and materials within 150mm of permanent subgrade level so as to withstand test rolling without visible deformation or springing. Corrective action is required where unstable areas exceed 20% of the area being considered by test rolling.

Section 5.2 of AS3798-2007 (Section 5.2) establishes a specification requirement for a minimum density ratio of not less than 95% noting that soils containing more than 20% of particles coarser than 37.5mm cannot be tested for relative compaction using the procedures of AS1289 5.1.1 and AS1289 5.2.1.



In accordance with Table 8.1 (AS3798), for large scale operations, (greater than 1500m²), the minimum testing frequency is 1 test per layer per material type per 2500m² or 1 test per 500m³ distributed reasonable evenly throughout full depth and area or 3 tests per lot. AS3798 defines a lot as "an area of work that is essentially homogenous in relation to material type and moisture condition, rolling response and compaction technique, and which has been used for the assessment of the relative compaction of an area of work". All three of these test frequencies must be achieved and this is typically confirmed to have been achieved when 3 tests per visit (day) have been completed.

2.3 Limitations

Terra Firma Laboratories cannot verify any works completed by others outside of the time period specified in the introduction. Uncontrolled works may include, but are not limited to trenching for services, cut and fill works for slab preparation or subsequent removal of vegetation and back fill of holes unless specified in section 2.1 of this report.

Terra Firma Laboratories cannot verify that the material used as a filling medium is free from chemical or other contamination. The scope and the period of Terra Firma Laboratories as described in the introduction are subject to restrictions and limitations. Terra Firma Laboratories did not perform a complete assessment of all possible conditions and circumstances that may exist at the site. If a service is not expressly indicated, do not assume it has been provided. If a matter is not addressed, do not assume that any determination has been made by Terra Firma Laboratories.

Verification of finished surface level to design levels is outside of the scope of the GITA report.

Any drawings or marked locations presented in this report should be considered only as pictorial evidence of our work. Therefore, unless otherwise stated, any dimensions should not be used for accurate calculations or dimensioning.

Where data has been supplied by the client or a third party, it is assumed that the information is correct unless otherwise stated. No responsibility is accepted by Terra Firma Laboratories for incomplete or inaccurate data supplied by others.

This document is COPYRIGHT, all rights reserved to Terra Firma Laboratories and therefore no part of this document may be reproduced or copied in any form or by means without the written permission of Terra Firma Laboratories. This submission is for the use only of the party to whom it is addressed and for no other purpose. No responsibility is accepted to any third party who may use or rely on the whole or any part of the content of this submission. No responsibility will be taken for this report if it is altered in any way, or not reproduced in full.

Our Head Office 47 National Ave Pakenham, VIC 3810 Our Laboratories Pakenham 03 9769 5799 Deer Park 03 8348 5596 Bibra Lake 08 9395 7220

TERRAFIRMALABS.COM.AU Template V8, 26/06/2019 Page 4 of 6



3 Construction Method

3.1 Subgrade Preparation

At the time of subgrade inspection the following was observed:

- Subgrade preparation involved stripping the site of topsoil, vegetation and organic matter to a depth of approximately 200mm below existing levels.
- The site was cleared of all trees and stumps to the extent necessary for the fill placement to proceed
- The roots of all trees and any debris was removed from site prior to any fill placement

The sub-grade area was then proof-rolled to confirm it was capable of withstanding test rolling without visible deformation or springing and any areas observed to be soft or otherwise unsuitable were rectified. The sub-grade was watered and scarified prior to fill placement to aid layer bonding.

3.2 Fill Placement

The contractor was observed to have suitable construction equipment and plant available on-site during the construction period for use in the fill placement.

All fill was placed in layers of thicknesses not exceeding 300mm. At the completion of a placed layer, compaction testing was performed to confirm appropriate compaction had been achieved and supported the observations made. It should be noted that the compaction tests are representative samples of the fill placed and support the visual assessment of the works completed. Each house lot does not necessarily require a compaction test to to have been conducted within the house allotment but may have been verified by testing conducted within up to a 2500m² area of the house lot.

Final fill placement levels were verified against design level by others. For the purposes of this report, it was observed that finished levels were in accordance with levels marked on site by survey markers.

The final 300mm of fill placed across the site was placed as a topsoil layer or growing medium and should be considered as non-structural, as it was placed in an uncontrolled manner, as allowed by specifications and placement of the final 300mm of fill was not observed by the GITA.

4 Construction Verification

Compaction Verification testing is summarized in a detailed test register with test certificates attached provided in Appendix 2: *Compaction Test Register and Test Certificates*. A test location

Our Head Office 47 National Ave Pakenham, VIC 3810 Our Laboratories Pakenham 03 9769 5799 Deer Park 03 8348 5596 Bibra Lake 08 9395 7220

TERRAFIRMALABS.COM.AU Template V8, 26/06/2019 Page 5 of 6



plan (P20326 D1, Appendix 1) providing a schematic of test locations across the extent of scope of works for every placed layer of fill is also documented.

A total of 22 density tests (Hilf method in accordance with 1289 5.7.1) were undertaken with 0 failed results. The results summarised in the compaction test register (Appendix 2) confirm that for every layer of fill placed in a specific work area, satisfactory testing was completed.

5 Statement of Compliance

The intention of this report is to provide a description of the earthworks construction for Stage 7 at Summerhill Estate. For completed fill areas of greater than 300mm, and for works completed between 20/08/2020 and 4/09/2020, earthworks construction activities were conducted under the full time supervision of the Geotechnical Inspection and Testing Authority. Inspections and testing of the fill areas at this site indicate that both sub grade preparation and fill placement have been conducted in accordance with the specification. The earthworks construction for Stage 7 of Summerhill Estate was observed to be constructed in compliance with the requirements of the Technical Specification.

Our Head Office 47 National Ave Pakenham, VIC 3810 Our Laboratories Pakenham 03 9769 5799 Deer Park 03 8348 5596 Bibra Lake 08 9395 7220

TERRAFIRMALABS.COM.AU Template V8, 26/06/2019 Page 6 of 6

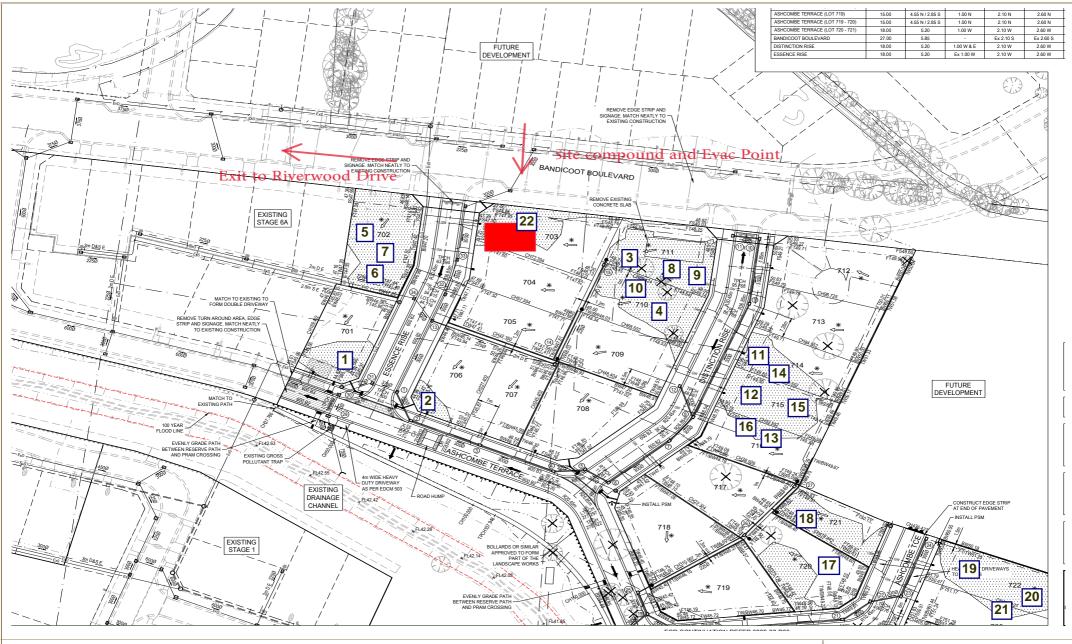
Your Worksite is Our Laboratory.



Appendix 1: Test Location Plan

Our Head Office

47 National Ave Pakenham, VIC 3810 Our Laboratories Pakenham 03 9769 5799 Deer Park 03 8348 5596 Bibra Lake 08 9395 7220



	<u>Our Head Office</u> 47 National Ave		Client:	Streetworks Pty Ltd
firma	Akenham, VIC 3810 <u>Our Laboratories</u> Pakenham (J9 3769 5799 Deer Park 03 8248 5596	Test Location Plan not to scale	Project:	Summerhill Estate, Stage 7
laboratories	Bibra Lake 08 9395 7220	U. NOZ IRLANDANET Tari Landar Maria	Reference	: P20326 D1



Your Worksite is Our Laboratory.

Appendix 2: Compaction Test Register and Test Certificates

Our Head Office

47 National Ave Pakenham, VIC 3810 Our Laboratories Pakenham 03 9769 5799 Deer Park 03 8348 5596 Bibra Lake 08 9395 7220

TERRAFIRMALABS.COM.AU Page 2 of 2



Compaction Test Register

Client:	Streetwork	s Pty Ltd		Project No	o:	P20326		
Project:	Summerhil	l Estate S	tage 7	Specification:		95%		
Date:	Test No:	Layer:	Retest of:	Density:	Pass/Fail:	Lot No:	Report No:	
20/08/2020	1	FSL		97.5	Pass	Lot 701	P20326-1	
20/08/2020	2	FSL		97.5	Pass	Lot 706	P20326-1	
21/08/2020	3	FSL		102.0	Pass	Lot 711	P20326-2	
21/08/2020	4	FSL		101.0	Pass	Lot 710	P20326-2	
21/08/2020	5	Layer 2		103.5	Pass	Lot 702	P20326-2	
21/08/2020	6	Layer 4		97.0	Pass	Lot 702	P20326-2	
21/08/2020	7	FSL		95.0	Pass	Lot 702	P20326-2	
24/08/2020	8	layer 1		101.5	Pass	Lot 711	P20326-3	
24/08/2020	9	layer 1		99.0	Pass	Lot 711	P20326-3	
24/08/2020	10	layer 1		99.0	Pass	Lot 710	P20326-3	
25/08/2020	11	Layer 3		101.0	Pass	Lot 714	P20326-4	
25/08/2020	12	Layer 3		101.5	Pass	Lot 715	P20326-4	
25/08/2020	13	Layer 3		100.5	Pass	Lot 716	P20326-4	
26/08/2020	14	Layer 4		100.5	Pass	Lot 714	P20326-5	
26/08/2020	15	Layer 4		101.0	Pass	Lot 715	P20326-5	
26/08/2020	16	Layer 4		101.5	Pass	Lot 716	P20326-5	
02/09/2020	17	Layer 3		97.0	Pass	Lot 720	P20326-6	
02/09/2020	18	Layer 3		99.5	Pass	Lot 721	P20326-6	
02/09/2020	19	Layer 1		98.0	Pass	Lot 722	P20326-6	
04/09/2020	20	Layer 5		99.0	Pass	Lot 722	P20326-7	
04/09/2020	21	Layer 4		99.0	Pass	Lot 723	P20326-7	
04/09/2020	22	Layer 1		97.5	Pass	Lot 703	P20326-7	

Report Number:	P20326-1
Issue Number:	1
Date Issued:	24/08/2020
Client:	Street Works Pty Ltd
	45 Commercial Drive, Pakenham Vic 3810
Project Number:	P20326
Project Name:	Summerhill Stage 7
Project Location:	Cranbourne South
Work Request:	4331
Date Sampled:	20/08/2020 8:00
Dates Tested:	21/08/2020 - 21/08/2020
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	95%
Material:	SAND
Material Source:	Onsite - Stockpile



Pakenham Laboratory 47 National Avenue Pakenham VIC 3810 Phone: (03) 9769 5799 Email: jsomaratne@terrafirmalabs.com.au

Accredited for compliance with ISO/IEC 17025 - Testing



Approved Signatory: Janaka Somaratne Lab Manager NATA Accredited Laboratory Number: 15357

the

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1					
Sample Number	P20-4331A	P20-4331B			
Test Number	1	2			
Date Tested	20/08/2020	20/08/2020			
Time Tested	08:00	08:00			
Test Request #/Location	Lot 701	Lot 706			
Layer / Reduced Level	FSL	FSL			
Thickness of Layer (mm)	300	300			
Soil Description	Sand	Sand			
Test Depth (mm)	275	275			
Sieve used to determine oversize (mm)	**	**			
Percentage of Wet Oversize (%)	0.0	0.0			
Field Wet Density (FWD) t/m ³	1.97	2.09			
Field Moisture Content %	10.6	14.0			
Field Dry Density (FDD) t/m ³	1.78	1.83			
Peak Converted Wet Density t/m ³	2.02	2.14			
Adjusted Peak Converted Wet Density t/m ³	**	**			
Moisture Ratio % (AS 1289.5.4.1)	79.5	103.0			
Adjusted Moisture Ratio % (AS 1289.5.4.1)	**	**			
Moisture Variation (Wv) %	2.5	-0.5			
Adjusted Moisture Variation %	**	**			
Hilf Density Ratio (%)	97.5	97.5			
Compaction Method	Standard	Standard			

Moisture Variation Note:

Positive values = test is dry of OMC

Report Number:	P20326-2
Issue Number:	1
Date Issued:	26/08/2020
Client:	Street Works Pty Ltd
	45 Commercial Drive, Pakenham Vic 3810
Project Number:	P20326
Project Name:	Summerhill Stage 7
Project Location:	Cranbourne South
Work Request:	4337
Date Sampled:	21/08/2020 8:00
Dates Tested:	21/08/2020 - 25/08/2020
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	95%
Material:	SAND
Material Source:	Onsite - Stockpile



Pakenham Laboratory 47 National Avenue Pakenham VIC 3810 Phone: (03) 9769 5799 Email: jsomaratne@terrafirmalabs.com.au

Accredited for compliance with ISO/IEC 17025 - Testing



Approved Signatory: Janaka Somaratne Lab Manager NATA Accredited Laboratory Number: 15357

the

Compaction Control AS 1289 5.7.1 & 5.8.	1 & 2.1.1				
Sample Number	P20-4337A	P20-4337B	P20-4337C	P20-4337D	P20-4337E
Test Number	3	4	5	6	7
Date Tested	21/08/2020	21/08/2020	21/08/2020	21/08/2020	21/08/2020
Time Tested	08:00	08:00	08:00	08:00	08:00
Test Request #/Location	Lot 711	Lot 710	Lot 702	Lot 702	Lot 702
Layer / Reduced Level	FSL	FSL	Layer 2	Layer 4	FSL
Thickness of Layer (mm)	300	300	300	300	300
Soil Description	SAND	SAND	SAND	SAND	SAND
Test Depth (mm)	275	275	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0	**	19.0
Percentage of Wet Oversize (%)	0.0	0.0	0.0	0.0	0.0
Field Wet Density (FWD) t/m ³	1.88	1.89	2.10	1.94	1.87
Field Moisture Content %	5.7	5.4	6.2	9.7	6.4
Field Dry Density (FDD) t/m ³	1.78	1.80	1.97	1.77	1.76
Peak Converted Wet Density t/m ³	1.85	1.87	2.03	2.00	1.97
Adjusted Peak Converted Wet Density t/m ³	**	**	**	**	**
Moisture Ratio % (AS 1289.5.4.1)	58.0	58.0	61.5	70.5	70.5
Adjusted Moisture Ratio % (AS 1289.5.4.1)	**	**	**	**	**
Moisture Variation (Wv) %	4.5	4.5	4.0	4.0	3.0
Adjusted Moisture Variation %	**	**	**	**	**
Hilf Density Ratio (%)	102.0	101.0	103.5	97.0	95.0
Compaction Method	Standard	Standard	Standard	Standard	Standard

Moisture Variation Note:

Positive values = test is dry of OMC

Report Number:	P20326-3
Issue Number:	1
Date Issued:	26/08/2020
Client:	Street Works Pty Ltd
	45 Commercial Drive, Pakenham Vic 3810
Project Number:	P20326
Project Name:	Summerhill Stage 7
Project Location:	Cranbourne South
Client Reference:	6153
Work Request:	4342
Date Sampled:	24/08/2020
Dates Tested:	24/08/2020 - 25/08/2020
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	95%
Material:	SAND
Material Source:	Onsite



Pakenham Laboratory 47 National Avenue Pakenham VIC 3810 Phone: (03) 9769 5799 Email: jsomaratne@terrafirmalabs.com.au

Accredited for compliance with ISO/IEC 17025 - Testing



Approved Signatory: Janaka Somaratne Lab Manager NATA Accredited Laboratory Number: 15357

an

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1						
Sample Number	P20-4342A	P20-4342B	P20-4342C			
Test Number	8	9	10			
Date Tested	24/08/2020	24/08/2020	24/08/2020			
Time Tested	03:20	03:30	03:40			
Test Request #/Location	Lot 711	Lot 711	Lot 710			
Layer / Reduced Level	layer 1	layer 1	layer 1			
Thickness of Layer (mm)	300	300	300			
Soil Description	SAND	SAND	SAND			
Test Depth (mm)	**	**	**			
Sieve used to determine oversize (mm)	**	**	**			
Percentage of Wet Oversize (%)	0.0	0.0	0.0			
Field Wet Density (FWD) t/m ³	1.88	1.89	1.88			
Field Moisture Content %	6.8	7.0	7.8			
Field Dry Density (FDD) t/m ³	1.76	1.76	1.75			
Peak Converted Wet Density t/m ³	1.85	1.91	1.90			
Adjusted Peak Converted Wet Density t/m3	**	**	**			
Moisture Ratio % (AS 1289.5.4.1)	55.5	63.0	61.5			
Adjusted Moisture Ratio % (AS 1289.5.4.1)	**	**	**			
Moisture Variation (Wv) %	6.0	4.5	5.0			
Adjusted Moisture Variation %	**	**	**			
Hilf Density Ratio (%)	101.5	99.0	99.0			
Compaction Method	Standard	Standard	Standard			

Moisture Variation Note:

Positive values = test is dry of OMC

Report Number:	P20326-4
Issue Number:	1
Date Issued:	27/08/2020
Client:	Street Works Pty Ltd
	45 Commercial Drive, Pakenham Vic 3810
Project Number:	P20326
Project Name:	Summerhill Stage 7
Project Location:	Cranbourne South
Client Reference:	6154
Work Request:	4350
Date Sampled:	25/08/2020
Dates Tested:	25/08/2020 - 26/08/2020
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	95%
Material:	SAND
Material Source:	Onsite - Stockpile



Pakenham Laboratory 47 National Avenue Pakenham VIC 3810 Phone: (03) 9769 5799 Email: jsomaratne@terrafirmalabs.com.au

Accredited for compliance with ISO/IEC 17025 - Testing



Approved Signatory: Janaka Somaratne Lab Manager NATA Accredited Laboratory Number: 15357

an

Compaction Control AS 1289 5.7.1 & 5.8.	1 & 2.1.1		
Sample Number	P20-4350A	P20-4350B	P20-4350C
Test Number	11	12	13
Date Tested	25/08/2020	25/08/2020	25/08/2020
Time Tested	04:00	04:10	04:20
Test Request #/Location	Lot 714	Lot 715	Lot 716
Chainage (m)	**	**	**
Location Offset (m)	**	**	**
Layer / Reduced Level	Layer 3	Layer 3	Layer 3
Thickness of Layer (mm)	300	300	300
Soil Description	SAND	**	**
Test Depth (mm)	275	275	275
Sieve used to determine oversize (mm)	**	**	**
Percentage of Wet Oversize (%)	0.0	0.0	0.0
Field Wet Density (FWD) t/m ³	1.85	1.85	1.85
Field Moisture Content %	6.1	6.1	6.2
Field Dry Density (FDD) t/m ³	1.74	1.74	1.74
Peak Converted Wet Density t/m ³	1.83	1.83	1.84
Adjusted Peak Converted Wet Density	**	**	**
Moisture Ratio % (AS 1289.5.4.1)	49.0	49.5	50.0
Adjusted Moisture Ratio % (AS 1289.5.4.1)	**	**	**
Moisture Variation (Wv) %	6.5	6.5	6.5
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	101.0	101.5	100.5
Compaction Method	Standard	Standard	Standard

Moisture Variation Note:

Positive values = test is dry of OMC Negative values = test is wet of OMC

Report Number:	P20326-5
Issue Number:	1
Date Issued:	03/09/2020
Client:	Street Works Pty Ltd
	45 Commercial Drive, Pakenham Vic 3810
Project Number:	P20326
Project Name:	Summerhill Stage 7
Project Location:	Cranbourne South
Client Reference:	6155
Work Request:	4354
Date Sampled:	26/08/2020
Dates Tested:	26/08/2020 - 27/08/2020
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	95%
Material:	SAND
Material Source:	Onsite - Stockpile



Pakenham Laboratory 47 National Avenue Pakenham VIC 3810 Phone: (03) 9769 5799 Email: jsomaratne@terrafirmalabs.com.au

Accredited for compliance with ISO/IEC 17025 - Testing



Approved Signatory: Janaka Somaratne Lab Manager NATA Accredited Laboratory Number: 15357

an

Compaction Control AS 1289 5.7.1 & 5.8.1 &	& 2.1.1		
Sample Number	P20-4354A	P20-4354B	P20-4354C
Test Number	14	15	16
Date Tested	26/08/2020	26/08/2020	26/08/2020
Time Tested	11:45	12:00	12:15
Test Request #/Location	Lot 714	Lot 715	Lot 716
Layer / Reduced Level	Layer 4	Layer 4	Layer 4
Thickness of Layer (mm)	300	300	300
Soil Description	SAND	SAND	SAND
Test Depth (mm)	275	275	275
Sieve used to determine oversize (mm)	**	**	**
Percentage of Wet Oversize (%)	0.0	0.0	0.0
Field Wet Density (FWD) t/m ³	1.84	1.88	1.87
Field Moisture Content %	5.8	7.9	5.8
Field Dry Density (FDD) t/m ³	1.74	1.74	1.76
Peak Converted Wet Density t/m ³	1.83	1.86	1.84
Adjusted Peak Converted Wet Density t/m ³	**	**	**
Moisture Ratio % (AS 1289.5.4.1)	47.5	54.5	47.5
Adjusted Moisture Ratio % (AS 1289.5.4.1)	**	**	**
Moisture Variation (Wv) %	7.0	7.0	7.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	100.5	101.0	101.5
Compaction Method	Standard	Standard	Standard

Moisture Variation Note:

Positive values = test is dry of OMC

Report Number:	P20326-6
Issue Number:	1
Date Issued:	07/09/2020
Client:	Street Works Pty Ltd
	45 Commercial Drive, Pakenham Vic 3810
Project Number:	P20326
Project Name:	Summerhill Stage 7
Project Location:	Cranbourne South
Client Reference:	6156
Work Request:	4390
Date Sampled:	02/09/2020
Dates Tested:	02/09/2020 - 04/09/2020
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	95%
Material:	SAND
Material Source:	Onsite - Stockpile



Pakenham Laboratory 47 National Avenue Pakenham VIC 3810 Phone: (03) 9769 5799 Email: jsomaratne@terrafirmalabs.com.au

Accredited for compliance with ISO/IEC 17025 - Testing



Approved Signatory: Janaka Somaratne Lab Manager NATA Accredited Laboratory Number: 15357

an

Compaction Control AS 1289 5.7.1 & 5.8.	1 & 2.1.1		
Sample Number	P20-4390A	P20-4390B	P20-4390C
Test Number	17	18	19
Date Tested	02/09/2020	02/09/2020	02/09/2020
Time Tested	03:00	03:20	03:30
Test Request #/Location	Lot 720	Lot 721	Lot 722
Layer / Reduced Level	Layer 3	Layer 3	Layer 1
Thickness of Layer (mm)	300	300	300
Soil Description	SAND	SAND	SAND
Test Depth (mm)	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0.0	0.0	0.0
Field Wet Density (FWD) t/m ³	1.79	1.76	1.73
Field Moisture Content %	6.4	5.0	4.4
Field Dry Density (FDD) t/m ³	1.68	1.67	1.65
Peak Converted Wet Density t/m ³	1.85	1.77	1.77
Adjusted Peak Converted Wet Density t/m ³	**	**	**
Moisture Ratio % (AS 1289.5.4.1)	58.5	51.5	50.0
Adjusted Moisture Ratio % (AS 1289.5.4.1)	**	**	**
Moisture Variation (Wv) %	5.0	5.5	5.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	97.0	99.5	98.0
Compaction Method	Standard	Standard	Standard

Moisture Variation Note:

Positive values = test is dry of OMC

Report Number:	P20326-7
Issue Number:	1
Date Issued:	08/09/2020
Client:	Street Works Pty Ltd
	45 Commercial Drive, Pakenham Vic 3810
Project Number:	P20326
Project Name:	Summerhill Stage 7
Project Location:	Cranbourne South
Client Reference:	6158
Work Request:	4405
Date Sampled:	04/09/2020
Dates Tested:	04/09/2020 - 07/09/2020
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	95%
Material:	SAND
Material Source:	Onsite



Pakenham Laboratory 47 National Avenue Pakenham VIC 3810 Phone: (03) 9769 5799 Email: jsomaratne@terrafirmalabs.com.au

Accredited for compliance with ISO/IEC 17025 - Testing



Approved Signatory: Janaka Somaratne Lab Manager NATA Accredited Laboratory Number: 15357

an

Compaction Control AS 1289 5.7.1 & 5.8	.1 & 2.1.1		
Sample Number	P20-4405A	P20-4405B	P20-4405C
Test Number	20	21	22
Date Tested	04/09/2020	04/09/2020	04/09/2020
Time Tested	01:40	01:50	03:30
Test Request #/Location	Lot 722	Lot 723	Lot 703
Layer / Reduced Level	Layer 5	Layer 4	Layer 1
Thickness of Layer (mm)	300	300	300
Soil Description	SAND	SAND	SAND
Test Depth (mm)	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0.0	0.0	0.0
Field Wet Density (FWD) t/m ³	1.79	1.79	1.78
Field Moisture Content %	4.3	4.8	4.6
Field Dry Density (FDD) t/m ³	1.71	1.71	1.70
Peak Converted Wet Density t/m ³	1.81	1.81	1.82
Adjusted Peak Converted Wet Density t/m ³	**	**	**
Moisture Ratio % (AS 1289.5.4.1)	70.5	59.5	52.5
Adjusted Moisture Ratio % (AS 1289.5.4.1)	**	**	**
Moisture Variation (Wv) %	2.0	3.5	4.5
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	99.0	99.0	97.5
Compaction Method	Standard	Standard	Standard

Moisture Variation Note:

Positive values = test is dry of OMC