

Octave At Junction Village Stage 7

GITA Inspection Verification Report

Prepared For: Streetworks Pty Ltd

Report Number P231309A V1

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Report Released By C Caulfield

Title Project Manager

Signature



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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 Octave At Junction Village Stage 7. This work was conducted over the period of 30/01/2023 to 20/03/2023.

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 through to 715 and the road reserve on Operetta Close and Sonata Way, bounded by streets Operetta Close and Sonata Way. 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: 0329-07-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.

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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.

The road reserve for Operetta Close and Sonata way was filled at the same time as the blocks under level 1 supervision. Some tests were taken on the road reserve throughout the filling. (Reference P231378-1 and P231378-2 tests 1 to 5).

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 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 150mm of material 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 150mm of material 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 plan (P231309D1, 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 38 density tests (Hilf method in accordance with 1289 5.7.1) were undertaken with 6 failed results. The contractor was notified of any failed tests and the failed areas were ripped, watered, compacted and then re-tested to confirm compliance with the specification. 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 Octave at Junction Village. For completed fill areas of greater than 300mm, and for works completed between 30/01/2023 and 20/03/2023, 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 Octave at Junction Village was observed to be constructed in compliance with the requirements of the Technical Specification.



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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

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Appendix 2: Compaction Test Register and Test Certificates



Compaction Test Register

Client: Streetworks Pty Ltd **Project No:** P231309
Project: Octave at Junction Village **Specification:** 95%
 Stage 7

Date:	Test No:	Layer:	Retest of:	Density:	Pass/Fail:	Lot No:	Report No:
30/01/2023	1	Layer 3		98.0%	Pass	Lot 712	P231309-1
30/01/2023	2	Layer 5		99.5%	Pass	Lot 713	P231309-1
30/01/2023	3	Layer 6		97.5%	Pass	Lot 714	P231309-1
31/01/2023	4	Layer 2		96.0%	Pass	Lot 712	P231309-2
31/01/2023	5	FSL		100.0%	Pass	Lot 713	P231309-2
31/01/2023	6	FSL		98.5%	Pass	Lot 714	P231309-2
3/03/2023	7	1 Layer		104.0%	Pass	Lot 702	P231309-3
3/03/2023	8	2 Layer		100.0%	Pass	Lot 703	P231309-3
3/03/2023	9	3 Layer		100.0%	Pass	Lot 704	P231309-3
3/03/2023	10	1 Layer		100.5%	Pass	Lot 705	P231309-3
3/03/2023	11	2 Layer		100.0%	Pass	Lot 706	P231309-3
3/03/2023	12	3 Layer		98.5%	Pass	Lot 707	P231309-3
3/03/2023	13	4 Layer		104.0%	Pass	Lot 708	P231309-3
3/03/2023	14	3 Layer		92.5%	Fail	Lot 709	P231309-3
3/03/2023	15	5 Layer		95.0%	Pass	Lot 707	P231309-3
3/03/2023	16	5 Layer		96.0%	Pass	Lot 708	P231309-3
3/03/2023	17	5 Layer		101.5%	Pass	Lot 709	P231309-3
4/03/2023	18	5 Layer		95.5%	Pass	Lot 702	P231309-4
4/03/2023	19	5 Layer		108.0%	Pass	Lot 704	P231309-4
4/03/2023	20	5 Layer		99.0%	Pass	Lot 706	P231309-4
4/03/2023	21	3 Layer		98.5%	Pass	Lot 711	P231309-4
4/03/2023	22	3 Layer		99.0%	Pass	Lot 715	P231309-4
4/03/2023	23	6 Layer		93.5%	Fail	Lot 703	P231309-4
4/03/2023	24	6 Layer		92.0%	Fail	Lot 705	P231309-4
4/03/2023	25	6 Layer		99.5%	Pass	Lot 708	P231309-4
6/03/2023	26	Layer 7		95.5%	Pass	Lot 706	P231309-5
6/03/2023	27	Layer 3	Test #14	97.5%	Pass	Lot 709	P231309-5
7/03/2023	28	Lift 7		99.0%	Pass	Lot 705	P231309-6
7/03/2023	29	Lift 8		94.0%	Fail	Lot 703	P231309-6
7/03/2023	30	Lift 8		99.0%	Pass	Lot 702	P231309-6
8/03/2023	31	Layer 6	Test #24	96.0%	Pass	Lot 705	P231309-7
8/03/2023	32	Layer 8	Test #29	97.5%	Pass	Lot 703	P231309-7
8/03/2023	33	Layer 6	Test #23	97.5%	Pass	Lot 703	P231309-7
15/03/2023	1	Layer 1		94.5%	Fail	Operetta Close	P231378-3
15/03/2023	2	Layer 3		98.0%	Pass	Sonata Way	P231378-3
15/03/2023	3	Layer 5		93.5%	Fail	Sonata Way	P231378-3
20/03/2023	4	Layer 1	Test #1	101.0%	Pass	Operetta Close	P231378-2
20/03/2023	5	Layer 5	Test #3	96.5%	Pass	Sonata Way	P231378-2

Material Test Report

Report Number: P231309-1
Issue Number: 1
Date Issued: 09/02/2023
Client: Street Works Pty Ltd
 45 Commercial Drive, Pakenham Vic 3810
Project Number: P231309
Project Name: Octave Stage 7 Level One
Project Location: Junction Village
Client Reference: 06589
Work Request: 11377
Date Sampled: 30/01/2023 10:30
Dates Tested: 30/01/2023 - 01/02/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95%
Location: Octave Stage 7 Level One
Material: Sandy silty CLAY
Material Source: Onsite



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



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Janaka Somaratne
 Lab Manager

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1

	P23-11377A	P23-11377B	P23-11377C
Sample Number	1	2	3
Test Number	1	2	3
Date Tested	30/01/2023	30/01/2023	30/01/2023
Time Tested	**	**	**
Test Request #/Location	Lot 712	Lot 713	Lot 714
Layer / Reduced Level	Layer 3	Layer 5	Layer 6
Thickness of Layer (mm)	300	300	300
Soil Description	Sandy silty CLAY	Sandy silty CLAY	Sandy silty CLAY
Test Depth (mm)	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	**	**
Percentage of Dry Oversize (%) (AS1289.5.4.1)	0	**	**
Field Wet Density (FWD) t/m ³	2.14	2.15	2.14
Field Moisture Content %	13.1	12.9	13.4
Field Dry Density (FDD) t/m ³	1.89	1.91	1.88
Peak Converted Wet Density t/m ³	2.18	2.16	2.20
Adjusted Peak Converted Wet Density t/m ³	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	11.3	**	**
Adj. Field Moisture Content % (AS1289.5.4.1)	13.1	**	**
Moisture Ratio % (AS1289.5.4.1)	115.5	110.0	114.5
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**
Moisture Variation (Wv) %	-2.0	-1.0	-1.5
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	98.0	99.5	97.5
Compaction Method	Standard	Standard	Standard
Report Remarks	**	**	**

Moisture Variation Note:

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

Material Test Report

Report Number: P231309-2
Issue Number: 1
Date Issued: 12/02/2023
Client: Street Works Pty Ltd
 45 Commercial Drive, Pakenham Vic 3810
Project Number: P231309
Project Name: Octave Stage 7 Level One
Project Location: Junction Village
Client Reference: 06591
Work Request: 11392
Date Sampled: 31/01/2023 8:30
Dates Tested: 31/01/2023 - 01/02/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95%
Location: Octave Stage 7 Level One
Material: Sandy silty CLAY
Material Source: Onsite



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 Lab Manager

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	P23-11392A	P23-11392B	P23-11392C
Test Number	4	5	6
Date Tested	31/01/2023	31/01/2023	31/01/2023
Time Tested	**	**	**
Test Request #/Location	1 Lot 712	2 Lot 713	3 Lot 714
Layer / Reduced Level	Layer 2	FSL	FSL
Thickness of Layer (mm)	300	300	300
Soil Description	Sandy silty CLAY	Sandy silty CLAY	Sandy silty CLAY
Test Depth (mm)	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	**	0	**
Percentage of Dry Oversize (%) (AS1289.5.4.1)	**	0	**
Field Wet Density (FWD) t/m ³	2.00	2.12	2.13
Field Moisture Content %	18.8	15.2	14.3
Field Dry Density (FDD) t/m ³	1.68	1.84	1.86
Peak Converted Wet Density t/m ³	2.08	2.12	2.16
Adjusted Peak Converted Wet Density t/m ³	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	**	14.2	**
Adj. Field Moisture Content % (AS1289.5.4.1)	**	15.2	**
Moisture Ratio % (AS1289.5.4.1)	113.0	107.0	110.5
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**
Moisture Variation (Wv) %	-2.0	-1.0	-1.5
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	96.0	100.0	98.5
Compaction Method	Standard	Standard	Standard
Report Remarks	**	**	**

Moisture Variation Note:

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

Material Test Report

Report Number: P231309-3
Issue Number: 1
Date Issued: 17/03/2023
Client: Street Works Pty Ltd
 45 Commercial Drive, Pakenham Vic 3810
Project Number: P231309
Project Name: Octave Stage 7 Level One
Project Location: Junction Village
Work Request: 11781
Date Sampled: 03/03/2023
Dates Tested: 03/03/2023 - 08/03/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95%
Site Selection: Selected by Client
Location: Octave Stage 7 Level One
Material: Sandy silty CLAY
Material Source: Onsite



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Approved Signatory: Chris Caulfield
 Project Manager

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1						
Sample Number	P23-11781A	P23-11781B	P23-11781C	P23-11781D	P23-11781E	P23-11781F
Test Number	7	8	9	10	11	12
Date Tested	03/03/2023	03/03/2023	03/03/2023	03/03/2023	03/03/2023	03/03/2023
Time Tested	**	**	**	**	**	**
Test Request #/Location	Lot702	Lot703	Lot704	Lot705	Lot706	Lot707
Layer / Reduced Level	1 Layer	2 Layer	3 Layer	1 Layer	2 Layer	3 Layer
Thickness of Layer (mm)	300	300	300	300	300	300
Soil Description	Sandy silty CLAY	Sandy silty CLAY	Sandy silty CLAY	Sandy silty CLAY	Sandy silty CLAY	Sandy silty CLAY
Test Depth (mm)	275	275	275	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0	0	0	0
Percentage of Dry Oversize (%) (AS1289.5.4.1)	**	**	**	**	**	**
Field Wet Density (FWD) t/m ³	2.17	2.18	2.17	2.20	2.18	2.18
Field Moisture Content %	47.8	12.4	8.7	10.0	12.3	11.5
Field Dry Density (FDD) t/m ³	1.47	1.94	2.00	2.00	1.94	1.95
Peak Converted Wet Density t/m ³	2.08	2.18	2.17	2.19	2.18	2.21
Adjusted Peak Converted Wet Density t/m ³	**	**	**	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	**	**	**	**	**	**
Adj. Field Moisture Content % (AS1289.5.4.1)	47.8	12.4	8.7	10.0	12.3	11.5
Moisture Ratio % (AS1289.5.4.1)	94.5	114.0	88.0	96.5	104.5	110.0
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**	**	**	**
Moisture Variation (Wv) %	2.0	-1.5	1.0	0.5	-0.5	-1.0
Adjusted Moisture Variation %	**	**	**	**	**	**
Hilf Density Ratio (%)	104.0	100.0	100.0	100.5	100.0	98.5
Compaction Method	Standard	Standard	Standard	Standard	Standard	Standard
Report Remarks	**	**	**	**	**	**

Moisture Variation Note:

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

Material Test Report

Report Number: P231309-3
Issue Number: 1
Date Issued: 17/03/2023
Client: Street Works Pty Ltd
 45 Commercial Drive, Pakenham Vic 3810
Project Number: P231309
Project Name: Octave Stage 7 Level One
Project Location: Junction Village
Work Request: 11781
Date Sampled: 03/03/2023
Dates Tested: 03/03/2023 - 08/03/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95%
Site Selection: Selected by Client
Location: Octave Stage 7 Level One
Material: Sandy silty CLAY
Material Source: Onsite



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Approved Signatory: Chris Caulfield
 Project Manager

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1

Sample Number	P23-11781G	P23-11781H	P23-11781I	P23-11781J	P23-11781K
Test Number	13	14	15	16	17
Date Tested	03/03/2023	03/03/2023	03/03/2023	03/03/2023	03/03/2023
Time Tested	**	**	**	**	**
Test Request #/Location	Lot708	Lot709	Lot 707	Lot 708	Lot 709
Layer / Reduced Level	4 Layer	3 Layer	5 Layer	5 Layer	5 Layer
Thickness of Layer (mm)	300	300	300	300	300
Soil Description	Sandy silty CLAY	Sandy silty CLAY	Sandy silty CLAY	Sandy silty CLAY	Sandy silty CLAY
Test Depth (mm)	275	275	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0	0	0
Percentage of Dry Oversize (%) (AS1289.5.4.1)	**	**	**	**	**
Field Wet Density (FWD) t/m ³	2.19	2.02	2.10	2.13	2.20
Field Moisture Content %	10.6	12.8	11.2	11.8	12.7
Field Dry Density (FDD) t/m ³	1.98	1.79	1.89	1.90	1.95
Peak Converted Wet Density t/m ³	2.10	2.19	2.21	2.21	2.17
Adjusted Peak Converted Wet Density t/m ³	**	**	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	**	**	**	**	**
Adj. Field Moisture Content % (AS1289.5.4.1)	10.6	12.8	11.2	11.8	12.7
Moisture Ratio % (AS1289.5.4.1)	92.0	116.0	101.0	100.5	105.5
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**	**	**
Moisture Variation (Wv) %	1.0	-2.0	0.0	0.0	-0.5
Adjusted Moisture Variation %	**	**	**	**	**
Hilf Density Ratio (%)	104.0	92.5	95.0	96.0	101.5
Compaction Method	Standard	Standard	Standard	Standard	Standard
Report Remarks	**	**	**	**	**

Moisture Variation Note:

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

Material Test Report

Report Number: P231309-4
Issue Number: 1
Date Issued: 17/03/2023
Client: Street Works Pty Ltd
 45 Commercial Drive, Pakenham Vic 3810
Project Number: P231309
Project Name: Octave Stage 7 Level One
Project Location: Junction Village
Work Request: 11790
Date Sampled: 04/03/2023
Dates Tested: 04/03/2023 - 10/03/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95%
Site Selection: Selected by Client
Location: Octave Stage 7 - Level One
Material: Sandy silty CLAY
Material Source: Onsite



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Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Chris Caulfield
 Project Manager

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1

Sample Number	P23-11790A	P23-11790B	P23-11790C	P23-11790D
Test Number	18	19	20	21
Date Tested	04/03/2023	04/03/2023	04/03/2023	04/03/2023
Time Tested	**	**	**	**
Test Request #/Location	Lot 702	Lot 704	Lot 706	Lot 711
Layer / Reduced Level	5 Layer	5 Layer	5 Layer	3 Layer
Thickness of Layer (mm)	300	300	300	300
Soil Description	Sandy silty CLAY	Sandy silty CLAY	Sandy silty CLAY	Sandy silty CLAY
Test Depth (mm)	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
Percentage of Dry Oversize (%) (AS1289.5.4.1)	**	**	**	**
Field Wet Density (FWD) t/m ³	2.12	2.11	2.20	2.14
Field Moisture Content %	12.5	11.4	12.8	12.9
Field Dry Density (FDD) t/m ³	1.89	1.90	1.95	1.89
Peak Converted Wet Density t/m ³	2.23	1.95	2.22	2.17
Adjusted Peak Converted Wet Density t/m ³	**	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	**	**	**	**
Adj. Field Moisture Content % (AS1289.5.4.1)	12.5	11.4	12.8	12.9
Moisture Ratio % (AS1289.5.4.1)	122.0	88.0	119.5	103.5
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**	**
Moisture Variation (Wv) %	-2.5	1.5	-2.0	-0.5
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	95.5	108.0	99.0	98.5
Compaction Method	Standard	Standard	Standard	Standard
Report Remarks	**	**	**	**

Moisture Variation Note:

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

Material Test Report

Report Number: P231309-4
Issue Number: 1
Date Issued: 17/03/2023
Client: Street Works Pty Ltd
 45 Commercial Drive, Pakenham Vic 3810
Project Number: P231309
Project Name: Octave Stage 7 Level One
Project Location: Junction Village
Work Request: 11790
Date Sampled: 04/03/2023
Dates Tested: 04/03/2023 - 10/03/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95%
Site Selection: Selected by Client
Location: Octave Stage 7 - Level One
Material: Sandy silty CLAY
Material Source: Onsite



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Approved Signatory: Chris Caulfield
 Project Manager

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1

Sample Number	P23-11790E	P23-11790F	P23-11790G	P23-11790H
Test Number	22	23	24	25
Date Tested	04/03/2023	04/03/2023	04/03/2023	04/03/2023
Time Tested	**	**	**	**
Test Request #/Location	Lot 715	Lot 703	Lot 705	Lot 708
Layer / Reduced Level	3 Layer	6 Layer	6 Layer	6 Layer
Thickness of Layer (mm)	300	300	300	300
Soil Description	Sandy silty CLAY	Sandy silty CLAY	Sandy silty CLAY	Sandy silty CLAY
Test Depth (mm)	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
Percentage of Dry Oversize (%) (AS1289.5.4.1)	**	**	**	**
Field Wet Density (FWD) t/m ³	2.20	2.06	2.02	2.20
Field Moisture Content %	11.5	9.5	9.5	11.7
Field Dry Density (FDD) t/m ³	1.97	1.88	1.85	1.97
Peak Converted Wet Density t/m ³	2.22	2.21	2.21	2.20
Adjusted Peak Converted Wet Density t/m ³	**	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	**	10.0	10.0	10.4
Adj. Field Moisture Content % (AS1289.5.4.1)	11.5	9.5	9.5	11.7
Moisture Ratio % (AS1289.5.4.1)	114.0	95.5	95.0	112.0
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**	**
Moisture Variation (Wv) %	-1.5	0.5	0.5	-1.5
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	99.0	93.5	92.0	99.5
Compaction Method	Standard	Standard	Standard	Standard
Report Remarks	**	**	**	**

Moisture Variation Note:

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

Material Test Report

Report Number: P231309-5
Issue Number: 2 - This version supersedes all previous issues
Reissue Reason:
Date Issued: 17/03/2023
Client: Street Works Pty Ltd
 45 Commercial Drive, Pakenham Vic 3810
Project Number: P231309
Project Name: Octave Stage 7 Level One
Project Location: Junction Village
Client Reference: 08812
Work Request: 11814
Date Sampled: 06/03/2023 15:51
Dates Tested: 06/03/2023 - 09/03/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95%
Site Selection: Selected by Client
Location: Octave Estate Stage 7 - Level One
Material: Clayey SAND
Material Source: Onsite



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 Project Manager

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	P23-11814A	P23-11814B	
Test Number	26	27	
Date Tested	06/03/2023	06/03/2023	
Time Tested	15:51	16:01	
Test Request #/Location	Lot No. 706	Lot No. 709 Retest #14	
Layer / Reduced Level	Layer 7	Layer 3	
Thickness of Layer (mm)	300	300	
Soil Description	Clayey SAND	Clayey SAND	
Test Depth (mm)	275	275	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	**	0	
Percentage of Dry Oversize (%) (AS1289.5.4.1)	**	**	
Field Wet Density (FWD) t/m ³	2.09	2.13	
Field Moisture Content %	20.6	24.3	
Field Dry Density (FDD) t/m ³	1.73	1.71	
Peak Converted Wet Density t/m ³	2.19	2.18	
Adjusted Peak Converted Wet Density t/m ³	**	**	
Adj. Optimum Moisture Content % (AS1289.5.4.1)	**	**	
Adj. Field Moisture Content % (AS1289.5.4.1)	**	24.3	
Moisture Ratio % (AS1289.5.4.1)	113.0	111.5	
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	
Moisture Variation (Wv) %	-2.5	-2.5	
Adjusted Moisture Variation %	**	**	
Hilf Density Ratio (%)	95.5	97.5	
Compaction Method	Standard	Standard	
Report Remarks	**	**	

Moisture Variation Note:

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

Material Test Report

Report Number: P231309-6
Issue Number: 1
Date Issued: 17/03/2023
Client: Street Works Pty Ltd
 45 Commercial Drive, Pakenham Vic 3810
Project Number: P231309
Project Name: Octave Stage 7 Level One
Project Location: Junction Village
Client Reference: 08813
Work Request: 11825
Date Sampled: 07/03/2023
Dates Tested: 07/03/2023 - 10/03/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95%
Site Selection: Selected by Client
Location: Octave Estate Stage 7 - Level One
Material: Clayey SAND
Material Source: Onsite



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Approved Signatory: Chris Caulfield
 Project Manager

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	P23-11825A	P23-11825B	P23-11825C
Test Number	28	29	30
Date Tested	07/03/2023	07/03/2023	07/03/2023
Time Tested	**	**	**
Test Request #/Location	Lot No. 705	Lot No. 703	Lot No. 702
Layer / Reduced Level	Lift 7	Lift 8	Lift 8
Thickness of Layer (mm)	300	300	300
Soil Description	Clayey SAND	Clayey SAND	Clayey 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
Percentage of Dry Oversize (%) (AS1289.5.4.1)	**	**	**
Field Wet Density (FWD) t/m ³	2.16	2.06	2.18
Field Moisture Content %	**	14.0	12.8
Field Dry Density (FDD) t/m ³	**	1.81	1.93
Peak Converted Wet Density t/m ³	2.19	2.19	2.20
Adjusted Peak Converted Wet Density t/m ³	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	**	**	**
Adj. Field Moisture Content % (AS1289.5.4.1)	**	14.0	12.8
Moisture Ratio % (AS1289.5.4.1)	**	110.0	113.5
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**
Moisture Variation (Wv) %	-0.5	-1.5	-1.5
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	99.0	94.0	99.0
Compaction Method	Standard	Standard	Standard
Report Remarks	**	**	**

Moisture Variation Note:

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

Material Test Report

Report Number: P231309-7
Issue Number: 1
Date Issued: 17/03/2023
Client: Street Works Pty Ltd
 45 Commercial Drive, Pakenham Vic 3810
Project Number: P231309
Project Name: Octave Stage 7 Level One
Project Location: Junction Village
Client Reference: 08815
Work Request: 11842
Date Sampled: 08/03/2023 14:03
Dates Tested: 08/03/2023 - 10/03/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95%
Site Selection: Selected by Client
Location: Octave Stage 7 Level One
Material: Clayey SAND
Material Source: Onsite



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Approved Signatory: Chris Caulfield
 Project Manager

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	P23-11842A	P23-11842B	P23-11842C
Test Number	31	32	33
Date Tested	08/03/2023	08/03/2023	08/03/2023
Time Tested	**	**	**
Test Request #/Location	Lot No. 705 RETEST #24	Lot No. 703 Retest #29	Lot No. 703 RETEST #23
Layer / Reduced Level	Layer 6	Layer 8	Layer 6
Thickness of Layer (mm)	300	300	300
Soil Description	Clayey SAND	Clayey SAND	Clayey 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
Percentage of Dry Oversize (%) (AS1289.5.4.1)	**	**	**
Field Wet Density (FWD) t/m ³	2.12	2.15	2.19
Field Moisture Content %	22.0	15.1	13.8
Field Dry Density (FDD) t/m ³	1.74	1.86	1.92
Peak Converted Wet Density t/m ³	2.21	2.21	2.24
Adjusted Peak Converted Wet Density t/m ³	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	18.9	14.7	11.5
Adj. Field Moisture Content % (AS1289.5.4.1)	22.0	15.1	13.8
Moisture Ratio % (AS1289.5.4.1)	117.0	102.5	119.5
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**
Moisture Variation (Wv) %	-3.0	-0.5	-2.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	96.0	97.5	97.5
Compaction Method	Standard	Standard	Standard
Report Remarks	**	**	**

Moisture Variation Note:

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

Material Test Report

Report Number: P231378-2
Issue Number: 1
Date Issued: 22/03/2023
Client: Street Works Pty Ltd
 45 Commercial Drive, Pakenham Vic 3810
Project Number: P231378
Project Name: Octave Stage 7 Roadbase
Project Location: Junction Village
Client Reference: 08821
Work Request: 11948
Date Sampled: 20/03/2023 10:26
Dates Tested: 20/03/2023 - 20/03/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95%
Site Selection: Selected by Client
Location: Octave Stage 7 - Subgrade Testing Retests
Material: Sandy silty CLAY
Material Source: Onsite



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Approved Signatory: Janaka Somaratne
 Lab Manager

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	P23-11948A	P23-11948B	
Date Tested	20/03/2023	20/03/2023	
Time Tested	**	**	
Test Request #/Location	1 Retest (Test 1)	2 Retest (Test 3)	
Layer / Reduced Level	Road Reserve	Road Reserve	
Thickness of Layer (mm)	300	300	
Soil Description	Sandy silty CLAY	Sandy silty CLAY	
Test Depth (mm)	275	275	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	0	0	
Field Wet Density (FWD) t/m ³	2.17	2.13	
Field Moisture Content %	7.1	11.3	
Field Dry Density (FDD) t/m ³	2.03	1.91	
Peak Converted Wet Density t/m ³	2.15	2.21	
Adjusted Peak Converted Wet Density t/m ³	**	**	
Moisture Variation (Wv) %	2.0	-1.0	
Adjusted Moisture Variation %	**	**	
Hilf Density Ratio (%)	101.0	96.5	
Compaction Method	Standard	Standard	
Report Remarks	**	**	

Moisture Variation Note:

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

Material Test Report

Report Number: P231378-3
Issue Number: 1
Date Issued: 31/03/2023
Client: Street Works Pty Ltd
 45 Commercial Drive, Pakenham Vic 3810
Project Number: P231378
Project Name: Octave Stage 7 Roadbase
Project Location: Junction Village
Work Request: 11890
Date Sampled: 08/03/2023 13:22
Dates Tested: 15/03/2023 - 16/03/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95%
Site Selection: Selected by Client
Location: Octave Stage 7 - Subgrade Testing
Material: Sandy silty CLAY
Material Source: Onsite



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Approved Signatory: Chris Caulfield
 Project Manager

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	P23-11890A	P23-11890B	
Date Tested	15/03/2023	15/03/2023	
Time Tested	**	**	
Test Request #/Location	1	2	
Layer / Reduced Level	Road Reserve	Road Reserve	
Thickness of Layer (mm)	300	300	
Soil Description	Sandy silty CLAY	Sandy silty CLAY	
Test Depth (mm)	275	275	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	0	0	
Percentage of Dry Oversize (%) (AS1289.5.4.1)	**	**	
Field Wet Density (FWD) t/m ³	2.01	2.17	
Field Moisture Content %	6.8	14.6	
Field Dry Density (FDD) t/m ³	1.88	1.89	
Peak Converted Wet Density t/m ³	2.13	2.21	
Adjusted Peak Converted Wet Density t/m ³	**	**	
Adj. Optimum Moisture Content % (AS1289.5.4.1)	**	12.6	
Adj. Field Moisture Content % (AS1289.5.4.1)	6.8	14.6	
Moisture Ratio % (AS1289.5.4.1)	64.5	115.5	
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	
Moisture Variation (Wv) %	4.0	-2.0	
Adjusted Moisture Variation %	**	**	
Hilf Density Ratio (%)	94.5	98.0	
Compaction Method	Standard	Standard	
Report Remarks	**	**	

Moisture Variation Note:

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

Material Test Report

Report Number: P231378-3
Issue Number: 1
Date Issued: 31/03/2023
Client: Street Works Pty Ltd
 45 Commercial Drive, Pakenham Vic 3810
Project Number: P231378
Project Name: Octave Stage 7 Roadbase
Project Location: Junction Village
Work Request: 11890
Date Sampled: 08/03/2023 13:22
Dates Tested: 15/03/2023 - 16/03/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95%
Site Selection: Selected by Client
Location: Octave Stage 7 - Subgrade Testing
Material: Sandy silty CLAY
Material Source: Onsite



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 Project Manager

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.1.1 & 5.4.1 & 5.8.1 & 2.1.1			
Sample Number	P23-11890C		
Date Tested	15/03/2023		
Time Tested	**		
Test Request #/Location	3		
Layer / Reduced Level	Road Reserve		
Thickness of Layer (mm)	300		
Soil Description	Sandy silty CLAY		
Test Depth (mm)	275		
Fraction Tested (mm)	19.0		
Oversize (wet basis) %	0		
Oversize (dry basis) %	0		
Curing Hours	**		
Method used to Determine Plasticity	Visual Assessment		
Field Wet Density t/m ³	2.10		
Field Moisture Content %	23.1		
Field Dry Density t/m ³	1.70		
Maximum Dry Density t/m ³	1.82		
Adjusted Maximum Dry Density t/m ³	**		
Optimum Moisture Content (OMC) %	14.5		
Adjusted Optimum Moisture Content (OMC) %	**		
Moisture Variation %	-8.5		
Moisture Ratio %	157.5		
Density Ratio %	93.5		
Compaction Method	Standard		

Moisture Variation Note:

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