

# Riverwalk Stage 33

## GITA Inspection Verification Report

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**Prepared For:** Excell Gray Bruni Pty Ltd

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**Report Number** D22767A V1

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**Version Release Date** 20 Sep 2022

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**Report Released By** C Caulfield

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**Title** Project Manager

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**Signature**



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## 1 Introduction

*Terra Firma Laboratories* was engaged by Excell Gray Bruni Pty Ltd as the Geotechnical Inspection and Testing Authority (GITA) to provide Level 1 supervision and testing works on the earthworks component for Riverwalk Stage 33. This work was conducted over the period of 08/03/2022 to 27/05/2022.

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 3301 to 3350, bounded by streets Moyne Road, Breezy Circuit, Bonang Road, Gokula Street, Tulsi Avenue, District Avenue, Rawson Circuit and Prana 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 Dalton Consulting Engineers (Drawing Reference: 10933FP01 and 02) and provided by Excell Gray Bruni 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 Excell Gray Bruni 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 1500m<sup>2</sup>), the minimum testing frequency is 1 test per layer per material type per 2500m<sup>2</sup> or 1 test per 500m<sup>3</sup> 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.

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 2500m<sup>2</sup> 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

plan (D22767D1, 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 37 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 33 at Riverwalk. For completed fill areas of greater than 300mm, and for works completed between 08/03/2022 and 27/05/2022, 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 33 of Riverwalk was observed to be constructed in compliance with the requirements of the Technical Specification.

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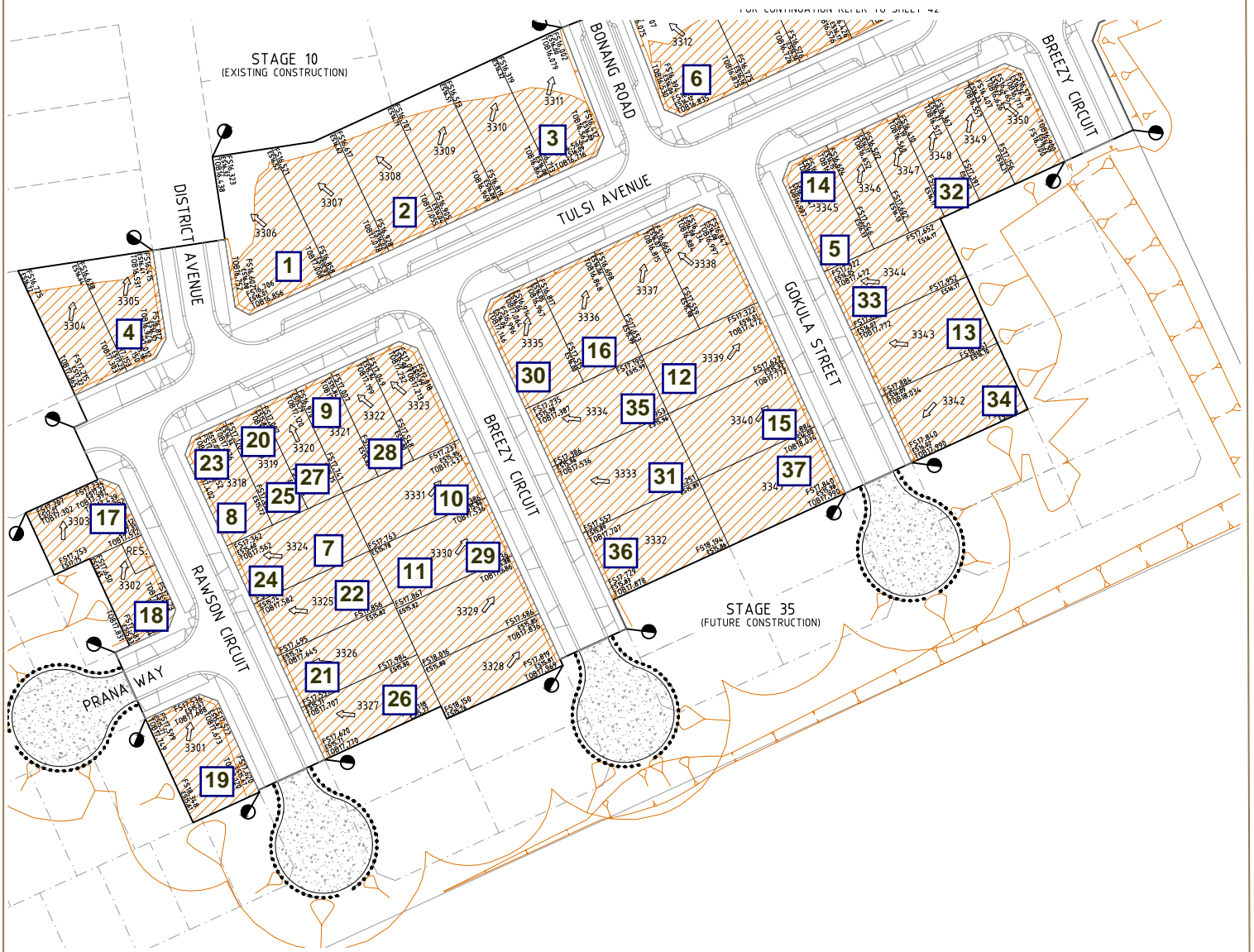
Your Worksite is Our Laboratory.

## Appendix 1: Test Location Plan

Our Head Office  
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Pakenham, VIC 3810

Our Laboratories  
Pakenham 03 9769 5799  
Deer Park 03 8348 5596  
Bibra Lake 08 9395 7220

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Our Head Office  
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Pakenham, VIC 3860

Our Laboratories  
Pakenham 03 9769 5799  
Deer Park 03 8348 5596  
Bibra Lake 08 9395 7220

### Test Location Plan

not to scale

Client: Excell Gray Bruni Pty Ltd

Project: Riverwalk, Stage 33

Reference: D22767D1





**Your Worksite is Our Laboratory.**

## **Appendix 2: Compaction Test Register and Test Certificates**



## Compaction Test Register

**Client:** Excell Gray Bruni Pty Ltd  
**Project:** Riverwalk Stage 33

**Project No:** D22767  
**Specification:** 95%

Date:	Test No:	Layer:	Retest of:	Density:	Pass/Fail:	Lot No:	Report No:
8/03/2022	1	Layer 1		99.5%	Pass	Lot 3306	D22767-1
8/03/2022	2	Layer 1		101.0%	Pass	Lot 3308	D22767-1
8/03/2022	3	Layer 1		99.5%	Pass	Lot 3311	D22767-1
9/03/2022	4	Layer 2		103.0%	Pass	Lot 3305	D22767-2
24/03/2022	5	Layer 1		96.5%	Pass	Lot 3345	D22767-3
24/03/2022	6	Layer 1		100.5%	Pass	Lot 3312	D22767-3
24/03/2022	7	Layer 1		100.5%	Pass	Lot 3324	D22767-3
28/03/2022	8	Layer 3		101.5%	Pass	Lot 3318	D22767-4
28/03/2022	9	Layer 3		101.5%	Pass	Lot 3321	D22767-4
28/03/2022	10	Layer 3		99.5%	Pass	Lot 3331	D22767-4
29/03/2022	11	Layer 4		103.0%	Pass	Lot 3330	D22767-5
29/03/2022	12	Layer 2		101.0%	Pass	Lot 3339	D22767-5
29/03/2022	13	Layer 2		98.0%	Pass	Lot 3343	D22767-5
30/03/2022	14	Layer 3		102.0%	Pass	Lot 3345	D22767-6
30/03/2022	15	Layer 3		100.0%	Pass	Lot 3340	D22767-6
30/03/2022	16	Layer 3		99.0%	Pass	Lot 3336	D22767-6
14/04/2022	17	Layer 2		101.5%	Pass	Lot 3303	D22767-7
14/04/2022	18	Layer 2		101.5%	Pass	Lot 3302	D22767-7
14/04/2022	19	Layer 2		100.0%	Pass	Lot 3301	D22767-7
27/04/2022	20	Layer 6		100.5%	Pass	Lot 3319	D22767-8
27/04/2022	22	Layer 6		100.5%	Pass	Lot 3326	D22767-8
27/04/2022	21	Layer 6		100.0%	Pass	Lot 3325	D22767-8
29/04/2022	23	Layer 7		101.5%	Pass	Lot 3318	D22767-9
29/04/2022	24	Layer 7		101.5%	Pass	Lot 3324	D22767-9
29/04/2022	25	Layer 7		101.5%	Pass	Lot 3319	D22767-9
19/05/2022	26	Layer 8		104.5%	Pass	Lot 3327	D22767-10
19/05/2022	27	Layer 8		100.0%	Pass	Lot 3320	D22767-10
19/05/2022	28	Layer 7		100.0%	Pass	Lot 3322	D22767-10
20/05/2022	29	Layer 8		101.0%	Pass	Lot 3330	D22767-11
20/05/2022	30	Layer 5		104.5%	Pass	Lot 3335	D22767-11
20/05/2022	31	Layer 5		104.0%	Pass	Lot 3333	D22767-11
25/05/2022	32	Layer 2		101.0%	Pass	Lot 3348	D22767-12
25/05/2022	33	Layer 5		102.0%	Pass	Lot 3344	D22767-12
25/05/2022	34	Layer 8		100.0%	Pass	Lot 3342	D22767-12
27/05/2022	35	Layer 6		102.0%	Pass	Lot 3334	D22767-13
27/05/2022	36	Layer 6		101.0%	Pass	Lot 3332	D22767-13
27/05/2022	37	Layer 6		99.5%	Pass	Lot 3341	D22767-13

# Material Test Report


**Report Number:** D22767-1  
**Issue Number:** 1  
**Date Issued:** 11/03/2022  
**Client:** Excell Gray Bruni  
 12 Allied Drive, Tullamarine Vic 3043  
**Project Number:** D22767  
**Project Name:** Riverwalk Estate Stage 33 - Level one  
**Project Location:** Werribee  
**Work Request:** 4359  
**Date Sampled:** 08/03/2022 15:50  
**Dates Tested:** 08/03/2022 - 10/03/2022  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% STD  
**Site Selection:** Selected by Client  
**Location:** Riverwalk Estate Stage 33 - Level one  
**Material:** Clay  
**Material Source:** Imported



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Accredited for compliance with ISO/IEC 17025 - Testing

  
 Approved Signatory: Eranda Hippola  
 Laboratory Manager  
 NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D22-4359A	D22-4359B	D22-4359C
Test Number	1	2	3
Date Tested	08/03/2022	08/03/2022	08/03/2022
Time Tested	15:50	15:50	15:50
Test Request #/Location	Lot 3306	Lot 3308	Lot 3311
Layer / Reduced Level	Layer 1	Layer 1	Layer 1
Thickness of Layer (mm)	300	300	300
Soil Description	Clay	Clay	Clay
Test Depth (mm)	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	6	0
Percentage of Dry Oversize (%) (AS1289.5.4.1)	0	**	0
Field Wet Density (FWD) t/m <sup>3</sup>	1.92	1.98	1.90
Field Moisture Content %	19.1	20.2	19.2
Field Dry Density (FDD) t/m <sup>3</sup>	1.61	1.67	1.60
Peak Converted Wet Density t/m <sup>3</sup>	1.92	**	1.92
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	**	1.96	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	23.4	23.5	23.3
Adj. Field Moisture Content % (AS1289.5.4.1)	19.1	18.9	19.2
Moisture Ratio % (AS1289.5.4.1)	81.5	**	82.5
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	80.5	**
Moisture Variation (Wv) %	4.0	**	4.0
Adjusted Moisture Variation %	**	4.5	**
Hilf Density Ratio (%)	<b>99.5</b>	<b>101.0</b>	<b>99.5</b>
Compaction Method	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Report Remarks	**	**	**

**Moisture Variation Note:**  
 Positive values = test is dry of OMC  
 Negative values = test is wet of OMC

# Material Test Report

**Report Number:** D22767-2  
**Issue Number:** 1  
**Date Issued:** 11/03/2022  
**Client:** Excell Gray Bruni  
 12 Allied Drive, Tullamarine Vic 3043  
**Project Number:** D22767  
**Project Name:** Riverwalk Estate Stage 33 - Level one  
**Project Location:** Werribee  
**Work Request:** 4360  
**Date Sampled:** 09/03/2022 14:45  
**Dates Tested:** 09/03/2022 - 10/03/2022  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% STD  
**Site Selection:** Selected by Client  
**Location:** Riverwalk Estate Stage 33 - Level one  
**Material:** Clay  
**Material Source:** Imported



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Approved Signatory: Eranda Hippola  
 Laboratory Manager

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D22-4360A		
Test Number	4		
Date Tested	09/03/2022		
Time Tested	14:45		
Test Request #/Location	LOT 3305		
Layer / Reduced Level	Layer 2		
Thickness of Layer (mm)	300		
Soil Description	Clay		
Test Depth (mm)	275		
Sieve used to determine oversize (mm)	19.0		
Percentage of Wet Oversize (%)	9		
Percentage of Dry Oversize (%) (AS1289.5.4.1)	**		
Field Wet Density (FWD) t/m <sup>3</sup>	2.06		
Field Moisture Content %	17.6		
Field Dry Density (FDD) t/m <sup>3</sup>	1.77		
Peak Converted Wet Density t/m <sup>3</sup>	**		
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	2.00		
Adj. Optimum Moisture Content % (AS1289.5.4.1)	20.8		
Adj. Field Moisture Content % (AS1289.5.4.1)	16.1		
Moisture Ratio % (AS1289.5.4.1)	**		
Adjusted Moisture Ratio % (AS1289.5.4.1)	77.5		
Moisture Variation (Wv) %	**		
Adjusted Moisture Variation %	4.5		
Hilf Density Ratio (%)	<b>103.0</b>		
Compaction Method	<b>Standard</b>		
Report Remarks	**		

**Moisture Variation Note:**  
 Positive values = test is dry of OMC  
 Negative values = test is wet of OMC

# Material Test Report


**Report Number:** D22767-3  
**Issue Number:** 1  
**Date Issued:** 30/03/2022  
**Client:** Excell Gray Bruni  
 12 Allied Drive, Tullamarine Vic 3043  
**Project Number:** D22767  
**Project Name:** Riverwalk Estate Stage 33 - Level one  
**Project Location:** Werribee  
**Work Request:** 4436  
**Date Sampled:** 24/03/2022 10:30  
**Dates Tested:** 24/03/2022 - 30/03/2022  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% STD  
**Site Selection:** Selected by Client  
**Location:** Riverwalk estate stage 33 - Level one  
**Material:** Clay  
**Material Source:** Imported



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 Laboratory Manager  
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## Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1

	D22-4436A	D22-4436B	D22-4436C
Sample Number	D22-4436A	D22-4436B	D22-4436C
Test Number	5	6	7
Date Tested	24/03/2022	24/03/2022	24/03/2022
Time Tested	10:15	10:30	10:45
Test Request #/Location	LOT 3345	LOT 3312	LOT 3324
Layer / Reduced Level	Layer 1	Layer 1	Layer 1
Thickness of Layer (mm)	300	300	300
Soil Description	Clay	Clay	Clay
Test Depth (mm)	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	7	10
Percentage of Dry Oversize (%) (AS1289.5.4.1)	0	**	**
Field Wet Density (FWD) t/m <sup>3</sup>	1.86	1.98	2.05
Field Moisture Content %	13.9	13.7	13.0
Field Dry Density (FDD) t/m <sup>3</sup>	1.64	1.76	1.83
Peak Converted Wet Density t/m <sup>3</sup>	1.93	**	**
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	**	1.98	2.04
Adj. Optimum Moisture Content % (AS1289.5.4.1)	18.4	17.8	16.6
Adj. Field Moisture Content % (AS1289.5.4.1)	13.9	12.8	11.7
Moisture Ratio % (AS1289.5.4.1)	75.5	**	**
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	72.5	70.5
Moisture Variation (Wv) %	4.5	**	**
Adjusted Moisture Variation %	**	5.0	5.0
Hilf Density Ratio (%)	<b>96.5</b>	<b>100.5</b>	<b>100.5</b>
Compaction Method	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Report Remarks	**	**	**

### Moisture Variation Note:

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

# Material Test Report

**Report Number:** D22767-4  
**Issue Number:** 1  
**Date Issued:** 01/04/2022  
**Client:** Excell Gray Bruni  
 12 Allied Drive, Tullamarine Vic 3043  
**Project Number:** D22767  
**Project Name:** Riverwalk Estate Stage 33 - Level one  
**Project Location:** Werribee  
**Work Request:** 4459  
**Date Sampled:** 28/03/2022 14:30  
**Dates Tested:** 28/03/2022 - 01/04/2022  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% STD  
**Location:** Riverwalk Estate stage 33 - Level one  
**Material:** Silty Clay  
**Material Source:** On Site



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Approved Signatory: Eranda Hippola  
 Laboratory Manager

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D22-4459A	D22-4459B	D22-4459C
Test Number	8	9	10
Date Tested	28/03/2022	28/03/2022	28/03/2022
Time Tested	14:30	14:45	15:00
Test Request #/Location	LOT 3318	LOT 3321	LOT 3331
Layer / Reduced Level	LAYER 3	LAYER 3	LAYER 3
Thickness of Layer (mm)	300	300	300
Soil Description	CLAY	CLAY	CLAY
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)	0	0	0
Field Wet Density (FWD) t/m <sup>3</sup>	1.98	1.99	1.97
Field Moisture Content %	25.7	25.5	25.9
Field Dry Density (FDD) t/m <sup>3</sup>	1.58	1.59	1.56
Peak Converted Wet Density t/m <sup>3</sup>	1.95	1.96	1.97
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	25.7	25.0	24.9
Adj. Field Moisture Content % (AS1289.5.4.1)	25.7	25.5	25.9
Moisture Ratio % (AS1289.5.4.1)	99.5	102.0	104.0
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**
Moisture Variation (Wv) %	0.0	-0.5	-1.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	<b>101.5</b>	<b>101.5</b>	<b>99.5</b>
Compaction Method	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Report Remarks	**	**	**

**Moisture Variation Note:**

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

# Material Test Report


**Report Number:** D22767-5  
**Issue Number:** 1  
**Date Issued:** 04/04/2022  
**Client:** Excell Gray Bruni  
 12 Allied Drive, Tullamarine Vic 3043  
**Project Number:** D22767  
**Project Name:** Riverwalk Estate Stage 33 - Level one  
**Project Location:** Werribee  
**Work Request:** 4465  
**Date Sampled:** 29/03/2022  
**Dates Tested:** 29/03/2022 - 04/04/2022  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% STD  
**Location:** Riverwalk estate stage 33 - Level one  
**Material:** Silty Clay  
**Material Source:** On Site



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 Laboratory Manager  
 NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D22-4465A	D22-4465B	D22-4465C
Test Number	11	12	13
Date Tested	29/03/2022	29/03/2022	29/03/2022
Time Tested	14:15	14:30	14:45
Test Request #/Location	LOT 3330	LOT 3339	LOT 3343
Layer / Reduced Level	LAYER 4	LAYER 2	LAYER 2
Thickness of Layer (mm)	300	300	300
Soil Description	CLAY	CLAY	CLAY
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)	0	0	0
Field Wet Density (FWD) t/m <sup>3</sup>	2.01	1.97	1.92
Field Moisture Content %	16.1	15.5	14.9
Field Dry Density (FDD) t/m <sup>3</sup>	1.73	1.70	1.67
Peak Converted Wet Density t/m <sup>3</sup>	1.95	1.95	1.96
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	19.0	18.6	17.2
Adj. Field Moisture Content % (AS1289.5.4.1)	16.1	15.5	14.9
Moisture Ratio % (AS1289.5.4.1)	84.5	83.5	86.5
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**
Moisture Variation (Wv) %	3.0	3.0	2.5
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	<b>103.0</b>	<b>101.0</b>	<b>98.0</b>
Compaction Method	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Report Remarks	**	**	**

**Moisture Variation Note:**  
 Positive values = test is dry of OMC  
 Negative values = test is wet of OMC

# Material Test Report

**Report Number:** D22767-6  
**Issue Number:** 1  
**Date Issued:** 05/04/2022  
**Client:** Excell Gray Bruni  
 12 Allied Drive, Tullamarine Vic 3043  
**Project Number:** D22767  
**Project Name:** Riverwalk Estate Stage 33 - Level one  
**Project Location:** Werribee  
**Work Request:** 4473  
**Date Sampled:** 30/03/2022 15:00  
**Dates Tested:** 30/03/2022 - 04/04/2022  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% STD  
**Location:** Riverwalk Estate stage 33 - Level one  
**Material:** Silty Clay  
**Material Source:** On Site



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Approved Signatory: Eranda Hippola  
 Laboratory Manager

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D22-4473A	D22-4473B	D22-4473C
Test Number	14	15	16
Date Tested	30/03/2022	30/03/2022	30/03/2022
Time Tested	14:15	14:30	14:45
Test Request #/Location	LOT 3345	LOT 3340	LOT 3336
Layer / Reduced Level	LAYER 3	LAYER 3	LAYER 3
Thickness of Layer (mm)	300	300	300
Soil Description	CLAY	CLAY	CLAY
Test Depth (mm)	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	8	5	4
Percentage of Dry Oversize (%) (AS1289.5.4.1)	**	**	**
Field Wet Density (FWD) t/m <sup>3</sup>	2.08	2.04	1.99
Field Moisture Content %	25.9	24.0	26.9
Field Dry Density (FDD) t/m <sup>3</sup>	1.68	1.67	1.58
Peak Converted Wet Density t/m <sup>3</sup>	**	**	**
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	2.04	2.04	2.01
Adj. Optimum Moisture Content % (AS1289.5.4.1)	28.3	27.2	29.9
Adj. Field Moisture Content % (AS1289.5.4.1)	23.7	22.7	25.8
Moisture Ratio % (AS1289.5.4.1)	**	**	**
Adjusted Moisture Ratio % (AS1289.5.4.1)	83.5	83.5	86.5
Moisture Variation (Wv) %	**	**	**
Adjusted Moisture Variation %	4.0	4.0	3.5
Hilf Density Ratio (%)	<b>102.0</b>	<b>100.0</b>	<b>99.0</b>
Compaction Method	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Report Remarks	**	**	**

## Moisture Variation Note:

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



# Material Test Report


**Report Number:** D22767-7  
**Issue Number:** 1  
**Date Issued:** 20/04/2022  
**Client:** Excell Gray Bruni  
 12 Allied Drive, Tullamarine Vic 3043  
**Project Number:** D22767  
**Project Name:** Riverwalk Estate Stage 33 - Level one  
**Project Location:** Werribee  
**Work Request:** 4556  
**Dates Tested:** 14/04/2022 - 19/04/2022  
**Location:** Riverwalk Estate stage 33 - Level One



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 Approved Signatory: Eranda Hippola  
 Laboratory Manager  
 NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D22-4556A	D22-4556B	D22-4556C
Test Number	17	18	19
Date Tested	14/04/2022	14/04/2022	14/04/2022
Time Tested	14:15	14:30	14:45
Test Request #/Location	LOT 3303	LOT 3302	LOT 3301
Layer / Reduced Level	LAYER 2	LAYER 2	LAYER 2
Thickness of Layer (mm)	300	300	300
Soil Description	CLAY	CLAY	CLAY
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)	0	0	0
Field Wet Density (FWD) t/m <sup>3</sup>	2.05	2.07	2.01
Field Moisture Content %	15.6	16.2	15.5
Field Dry Density (FDD) t/m <sup>3</sup>	1.78	1.78	1.74
Peak Converted Wet Density t/m <sup>3</sup>	2.03	2.03	2.02
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	20.4	21.1	20.8
Adj. Field Moisture Content % (AS1289.5.4.1)	15.6	16.2	15.5
Moisture Ratio % (AS1289.5.4.1)	76.5	77.0	74.5
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**
Moisture Variation (Wv) %	4.5	4.5	5.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	<b>101.5</b>	<b>101.5</b>	<b>100.0</b>
Compaction Method	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Report Remarks	**	**	**

**Moisture Variation Note:**

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

# Material Test Report


**Report Number:** D22767-8  
**Issue Number:** 1  
**Date Issued:** 29/04/2022  
**Client:** Excell Gray Bruni  
 12 Allied Drive, Tullamarine Vic 3043  
**Project Number:** D22767  
**Project Name:** Riverwalk Estate Stage 33 - Level one  
**Project Location:** Werribee  
**Work Request:** 4575  
**Date Sampled:** 27/04/2022  
**Dates Tested:** 27/04/2022 - 29/04/2022  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% STD  
**Location:** Riverwalk stage 33 - Level one  
**Material:** Clay  
**Material Source:** Imported



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 Approved Signatory: Eranda Hippola  
 Laboratory Manager  
 NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D22-4575A	D22-4575B	D22-4575C
Test Number	20	21	22
Date Tested	27/04/2022	27/04/2022	27/04/2022
Time Tested	15:10	15:30	15:20
Test Request #/Location	Lot 3319	Lot 3325	Lot 3326
Layer / Reduced Level	Layer 6	Layer 6	Layer 6
Thickness of Layer (mm)	300	300	300
Soil Description	Clay	Clay	Clay
Test Depth (mm)	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	6	7	0
Percentage of Dry Oversize (%) (AS1289.5.4.1)	**	**	0
Field Wet Density (FWD) t/m <sup>3</sup>	2.04	2.02	1.99
Field Moisture Content %	**	**	13.5
Field Dry Density (FDD) t/m <sup>3</sup>	**	**	1.75
Peak Converted Wet Density t/m <sup>3</sup>	**	**	1.98
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	2.03	2.02	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	17.2	17.1	18.0
Adj. Field Moisture Content % (AS1289.5.4.1)	**	**	13.5
Moisture Ratio % (AS1289.5.4.1)	**	**	75.0
Adjusted Moisture Ratio % (AS1289.5.4.1)	72.5	73.5	**
Moisture Variation (Wv) %	**	**	4.5
Adjusted Moisture Variation %	4.5	4.5	**
Hilf Density Ratio (%)	<b>100.5</b>	<b>100.0</b>	<b>100.5</b>
Compaction Method	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Report Remarks	**	**	**

**Moisture Variation Note:**

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

# Material Test Report


**Report Number:** D22767-9  
**Issue Number:** 1  
**Date Issued:** 03/05/2022  
**Client:** Excell Gray Bruni  
 12 Allied Drive, Tullamarine Vic 3043  
**Project Number:** D22767  
**Project Name:** Riverwalk Estate Stage 33 - Level one  
**Project Location:** Werribee  
**Work Request:** 4586  
**Date Sampled:** 29/04/2022 15:00  
**Dates Tested:** 29/04/2022 - 02/05/2022  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% STD  
**Location:** Riverwalk stage 33 -Level one  
**Material:** Clay  
**Material Source:** Imported



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 Approved Signatory: Eranda Hippola  
 Laboratory Manager  
 NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D22-4586A	D22-4586B	D22-4586C
Test Number	23	24	25
Date Tested	29/04/2022	29/04/2022	29/04/2022
Time Tested	14:40	14:50	15:00
Test Request #/Location	Lot 3318	Lot 3324	Lot 3319
Layer / Reduced Level	Layer 7	Layer 7	Layer 7
Thickness of Layer (mm)	300	300	300
Soil Description	Clay	Clay	Clay
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)	0	0	0
Field Wet Density (FWD) t/m <sup>3</sup>	2.02	2.01	1.99
Field Moisture Content %	16.3	16.0	17.8
Field Dry Density (FDD) t/m <sup>3</sup>	1.73	1.73	1.69
Peak Converted Wet Density t/m <sup>3</sup>	1.99	1.98	1.96
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	21.5	21.1	22.8
Adj. Field Moisture Content % (AS1289.5.4.1)	16.3	16.0	17.8
Moisture Ratio % (AS1289.5.4.1)	75.5	76.0	78.5
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**
Moisture Variation (Wv) %	5.0	5.0	4.5
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	101.5	101.5	101.5
Compaction Method	Standard	Standard	Standard
Report Remarks	**	**	**

**Moisture Variation Note:**  
 Positive values = test is dry of OMC  
 Negative values = test is wet of OMC





Daily Geotechnical Report – Level One Supervision

JOB: Riverwalk Estate st-33  
CLIENT: Excel Gray Brwni  
CLIENT CONTACT: \_\_\_\_\_ pH: \_\_\_\_\_

Job No:  
Date: 29/04/2022  
Name: K.K.  
Signature: [Signature]

Specification Density: Moisture Range: Other:	Testing Frequency: <u>3 tests / day</u> Density: <u>95% STD</u> Moisture: Other:
--	---

Test Results Received:	Corrective Action (if required) (- including retest nos, confirm test results with client, describe rework required)
------------------------	--

Plant and Equipment * compactor x 1 * DOZER x 1 * smooth drum compactor x 1 * truck and trailers x 6 * water cart x 1	Weather and Environmental Conditions  <u>cloudy</u>  H: <u>22°C</u> L: <u>15°C</u>
--	--

Description of works (activities conducted during the day and confirmation that work is performed to comply to specification).

- \* observed the filling area according to the site plan.
- \* truck and trailers stock piled the materials.
- \* moisture added before and after placing materials
- \* compactor compacted placed materials for layer 6 and 7. (refer to the plan)
- \* smooth drum compactor sealed the compacted Area due to the rain tonight.

Tests/ Samples (number, type, location of tests or samples taken)

TEST NO:	<u>23</u>	<u>24</u>	<u>25</u>
LOT NO:	<u>3318</u>	<u>3324</u>	<u>3319</u>
LAYER NO:	<u>7</u>	<u>7</u>	<u>7</u>

Communications (make note of discussions, meetings, attendance on site by auditors, key personnel etc.)

Site Plan Title/ Version:	<input type="checkbox"/> Site Map has been marked and dated with test locations
This Report is Page 1 of ....	



# Material Test Report


**Report Number:** D22767-10  
**Issue Number:** 1  
**Date Issued:** 24/05/2022  
**Client:** Excell Gray Bruni  
 12 Allied Drive, Tullamarine Vic 3043  
**Project Number:** D22767  
**Project Name:** Riverwalk Estate Stage 33 - Level one  
**Project Location:** Werribee  
**Work Request:** 4671  
**Date Sampled:** 19/05/2022 14:30  
**Dates Tested:** 19/05/2022 - 23/05/2022  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% STD  
**Location:** RiverWalk Estate Stage 33 - Level one  
**Material:** CLAY  
**Material Source:** IMPORTED



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Accredited for compliance with ISO/IEC 17025 - Testing

  
 Approved Signatory: Eranda Hippola  
 Laboratory Manager

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D22-4671A	D22-4671B	D22-4671C
Test Number	26	27	28
Date Tested	19/05/2022	19/05/2022	19/05/2022
Time Tested	14:30	14:45	15:00
Test Request #/Location	LOT 3327	LOT 3320	LOT 3322
Layer / Reduced Level	LAYER 8	LAYER 8	LAYER 7
Thickness of Layer (mm)	300	300	300
Soil Description	CLAY	CLAY	CLAY
Test Depth (mm)	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	5
Percentage of Dry Oversize (%) (AS1289.5.4.1)	0	0	**
Field Wet Density (FWD) t/m <sup>3</sup>	2.02	1.98	1.98
Field Moisture Content %	13.1	21.6	17.2
Field Dry Density (FDD) t/m <sup>3</sup>	1.78	1.63	1.70
Peak Converted Wet Density t/m <sup>3</sup>	1.93	1.98	**
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	**	**	1.98
Adj. Optimum Moisture Content % (AS1289.5.4.1)	17.8	26.5	20.7
Adj. Field Moisture Content % (AS1289.5.4.1)	13.1	21.6	16.2
Moisture Ratio % (AS1289.5.4.1)	73.5	81.5	**
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	78.5
Moisture Variation (Wv) %	4.5	4.5	**
Adjusted Moisture Variation %	**	**	4.0
Hilf Density Ratio (%)	<b>104.5</b>	<b>100.0</b>	<b>100.0</b>
Compaction Method	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Report Remarks	**	**	**

**Moisture Variation Note:**

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

# Material Test Report


**Report Number:** D22767-11  
**Issue Number:** 1  
**Date Issued:** 24/05/2022  
**Client:** Excell Gray Bruni  
 12 Allied Drive, Tullamarine Vic 3043  
**Project Number:** D22767  
**Project Name:** Riverwalk Estate Stage 33 - Level one  
**Project Location:** Werribee  
**Work Request:** 4678  
**Date Sampled:** 20/05/2022 14:30  
**Dates Tested:** 20/05/2022 - 23/05/2022  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% STD  
**Location:** Riverwalk stage 33 - Level One  
**Material:** Clay  
**Material Source:** On site



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 Approved Signatory: Eranda Hippola  
 Laboratory Manager  
 NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D22-4678A	D22-4678B	D22-4678C
Test Number	29	30	31
Date Tested	20/05/2022	20/05/2022	20/05/2022
Time Tested	14:30	14:40	14:50
Test Request #/Location	Lot 3330	Lot 3335	Lot 3333
Layer / Reduced Level	Layer 8	Layer 5	Layer 5
Thickness of Layer (mm)	300	300	300
Soil Description	Clay	Clay	Clay
Test Depth (mm)	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	9	18	12
Percentage of Dry Oversize (%) (AS1289.5.4.1)	**	**	**
Field Wet Density (FWD) t/m <sup>3</sup>	1.99	2.01	2.01
Field Moisture Content %	18.4	17.1	19.4
Field Dry Density (FDD) t/m <sup>3</sup>	1.71	1.77	1.71
Peak Converted Wet Density t/m <sup>3</sup>	**	**	**
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	1.97	1.92	1.93
Adj. Optimum Moisture Content % (AS1289.5.4.1)	19.3	15.5	18.5
Adj. Field Moisture Content % (AS1289.5.4.1)	16.6	14.1	17.2
Moisture Ratio % (AS1289.5.4.1)	**	**	**
Adjusted Moisture Ratio % (AS1289.5.4.1)	86.0	91.0	92.5
Moisture Variation (Wv) %	**	**	**
Adjusted Moisture Variation %	2.5	1.5	1.5
Hilf Density Ratio (%)	<b>101.0</b>	<b>104.5</b>	<b>104.0</b>
Compaction Method	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Report Remarks	**	**	**

**Moisture Variation Note:**  
 Positive values = test is dry of OMC  
 Negative values = test is wet of OMC

# Material Test Report


**Report Number:** D22767-12  
**Issue Number:** 1  
**Date Issued:** 27/05/2022  
**Client:** Excell Gray Bruni  
 12 Allied Drive, Tullamarine Vic 3043  
**Project Number:** D22767  
**Project Name:** Riverwalk Estate Stage 33 - Level one  
**Project Location:** Werribee  
**Work Request:** 4692  
**Date Sampled:** 25/05/2022 14:00  
**Dates Tested:** 25/05/2022 - 26/05/2022  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% STD  
**Location:** RiverWalk Estate Stage 33 - Level One  
**Material:** CLAY  
**Material Source:** IMPORTED



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 NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D22-4692A	D22-4692B	D22-4692C
Test Number	32	33	34
Date Tested	25/05/2022	25/05/2022	25/05/2022
Time Tested	14:00	14:15	14:30
Test Request #/Location	LOT 3348	LOT 3344	LOT 3342
Layer / Reduced Level	LAYER 2	LAYER 5	LAYER 5
Thickness of Layer (mm)	300	300	300
Soil Description	CLAY	CLAY	CLAY
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)	0	0	0
Field Wet Density (FWD) t/m <sup>3</sup>	1.96	1.96	1.94
Field Moisture Content %	22.2	20.3	20.7
Field Dry Density (FDD) t/m <sup>3</sup>	1.60	1.63	1.61
Peak Converted Wet Density t/m <sup>3</sup>	1.93	1.93	1.94
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	24.8	22.6	24.0
Adj. Field Moisture Content % (AS1289.5.4.1)	22.2	20.3	20.7
Moisture Ratio % (AS1289.5.4.1)	90.0	89.5	86.5
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**
Moisture Variation (Wv) %	2.5	2.5	3.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	<b>101.0</b>	<b>102.0</b>	<b>100.0</b>
Compaction Method	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Report Remarks	**	**	**

**Moisture Variation Note:**  
 Positive values = test is dry of OMC  
 Negative values = test is wet of OMC

# Material Test Report


**Report Number:** D22767-13  
**Issue Number:** 1  
**Date Issued:** 01/06/2022  
**Client:** Excell Gray Bruni  
 12 Allied Drive, Tullamarine Vic 3043  
**Project Number:** D22767  
**Project Name:** Riverwalk Estate Stage 33 - Level one  
**Project Location:** Werribee  
**Work Request:** 4704  
**Date Sampled:** 27/05/2022 14:30  
**Dates Tested:** 27/05/2022 - 31/05/2022  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% STD  
**Location:** Riverwalk Estate Stage 33 - Level One  
**Material:** CLAY  
**Material Source:** IMPORTED



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 Laboratory Manager  
 NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D22-4704A	D22-4704B	D22-4704C
Test Number	35	36	37
Date Tested	27/05/2022	27/05/2022	27/05/2022
Time Tested	14:30	14:45	15:00
Test Request #/Location	LOT 3334	LOT 3332	LOT 3341
Layer / Reduced Level	LAYER 6	LAYER 6	LAYER 6
Thickness of Layer (mm)	300	300	300
Soil Description	CLAY	CLAY	CLAY
Test Depth (mm)	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	9	6	9
Percentage of Dry Oversize (%) (AS1289.5.4.1)	**	**	**
Field Wet Density (FWD) t/m <sup>3</sup>	2.07	2.03	2.02
Field Moisture Content %	19.6	19.6	19.1
Field Dry Density (FDD) t/m <sup>3</sup>	1.76	1.72	1.72
Peak Converted Wet Density t/m <sup>3</sup>	**	**	**
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	2.03	2.01	2.03
Adj. Optimum Moisture Content % (AS1289.5.4.1)	19.6	21.0	19.5
Adj. Field Moisture Content % (AS1289.5.4.1)	17.9	18.5	17.4
Moisture Ratio % (AS1289.5.4.1)	**	**	**
Adjusted Moisture Ratio % (AS1289.5.4.1)	91.0	88.0	89.0
Moisture Variation (Wv) %	**	**	**
Adjusted Moisture Variation %	1.5	2.5	2.0
Hilf Density Ratio (%)	<b>102.0</b>	<b>101.0</b>	<b>99.5</b>
Compaction Method	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Report Remarks	**	**	**

**Moisture Variation Note:**  
 Positive values = test is dry of OMC  
 Negative values = test is wet of OMC



# Material Test Report

**Report Number:** D22874-1  
**Issue Number:** 1  
**Date Issued:** 30/08/2022  
**Client:** Excell Gray Bruni  
 12 Allied Drive, Tullamarine Vic 3043  
**Project Number:** D22874  
**Project Name:** Riverwalk Estate stage 33 -Drainage  
**Project Location:** Werribee  
**Work Request:** 5027  
**Date Sampled:** 22/08/2022 11:20  
**Dates Tested:** 22/08/2022 - 24/08/2022  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 98% Mod  
**Location:** Riverwalk stage 33 -Drainage  
**Material:** 20mm Class 2 Crushed Rock  
**Material Source:** Holcim-Werribee



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*Nalaka Bandara*

Approved Signatory: Nalaka Bandara  
 Lab Tech

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.2.1 & 5.4.1 & 5.8.1 & 2.1.1						
Sample Number	D22-5027A	D22-5027B	D22-5027C	D22-5027D	D22-5027E	D22-5027F
Date Tested	22/08/2022	22/08/2022	22/08/2022	22/08/2022	22/08/2022	22/08/2022
Time Tested	11:20	11:30	11:40	11:45	11:55	12:05
Test Request #/Location	Pit 40A -41	Pit 41 -42	Pit 42 -43	Pit 43 -44	Pit 44 -45	Pit 45 -49
Chainage (m)	**	**	**	**	**	**
Location Offset (m)	2m from Pit 41	3m from Pit 42	2m from Pit 43	3m from Pit 44	4m from Pit 44	1m from Pit 45
Layer / Reduced Level	-650	-650	-880	-880	-880	-730
Thickness of Layer (mm)	300	300	300	300	300	300
Soil Description	20mm Class 2 Crushed Rock	20mm Class 2 Crushed Rock	20mm Class 2 Crushed Rock	20mm Class 2 Crushed Rock	20mm Class 2 Crushed Rock	20mm Class 2 Crushed Rock
Test Depth (mm)	275	275	275	275	275	275
Fraction Tested (mm)	19.0	19.0	19.0	19.0	19.0	19.0
Oversize (wet basis) %	0	0	0	0	0	0
Oversize (dry basis) %	0	0	0	0	0	0
Curing Hours	2.0	2.0	2.0	2.0	2.0	2.0
Method used to Determine Plasticity	**	**	**	**	**	**
Field Wet Density t/m <sup>3</sup>	2.41	2.41	2.40	2.40	2.41	2.40
Field Moisture Content %	6.7	6.4	6.4	6.6	6.5	7.0
Field Dry Density t/m <sup>3</sup>	2.26	2.27	2.25	2.25	2.26	2.25
Maximum Dry Density t/m <sup>3</sup>	2.25	2.25	2.24	2.29	2.24	2.24
Adjusted Maximum Dry Density t/m <sup>3</sup>	**	**	**	**	**	**
Optimum Moisture Content (OMC) %	8.0	8.0	8.0	8.0	9.0	8.5
Adjusted Optimum Moisture Content (OMC) %	**	**	**	**	**	**
Moisture Variation %	1.5	1.5	2.0	1.0	2.5	1.5
Moisture Ratio %	81.5	79.0	78.5	85.0	73.5	83.0
Density Ratio %	<b>100.5</b>	<b>101.0</b>	<b>100.5</b>	<b>98.0</b>	<b>101.0</b>	<b>100.0</b>
Compaction Method	<b>Modified</b>	<b>Modified</b>	<b>Modified</b>	<b>Modified</b>	<b>Modified</b>	<b>Modified</b>

**Moisture Variation Note:**

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

# Material Test Report

**Report Number:** D22874-1  
**Issue Number:** 1  
**Date Issued:** 30/08/2022  
**Client:** Excell Gray Bruni  
 12 Allied Drive, Tullamarine Vic 3043  
**Project Number:** D22874  
**Project Name:** Riverwalk Estate stage 33 -Drainage  
**Project Location:** Werribee  
**Work Request:** 5027  
**Date Sampled:** 22/08/2022 11:20  
**Dates Tested:** 22/08/2022 - 24/08/2022  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 98% Mod  
**Location:** Riverwalk stage 33 -Drainage  
**Material:** 20mm Class 2 Crushed Rock  
**Material Source:** Holcim-Werribee



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Approved Signatory: Nalaka Bandara  
 Lab Tech

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.2.1 & 5.4.1 & 5.8.1 & 2.1.1						
Sample Number	D22-5027G	D22-5027H	D22-5027I	D22-5027J	D22-5027K	D22-5027L
Date Tested	22/08/2022	22/08/2022	22/08/2022	22/08/2022	22/08/2022	22/08/2022
Time Tested	12:15	12:25	12:35	12:45	12:55	13:05
Test Request #/Location	Pit 43 -48	Pit 1 -2	Pit 2 -3	Pit 3 -4	Pit 4 -5	Pit 5 -6
Chainage (m)	**	**	**	**	**	**
Location Offset (m)	3m from Pit 48	2m from Pit 2	2m from Pit 3	4m from Pit 4	1m from Pit 5	2m from Pit 6
Layer / Reduced Level	-880	-650	-650	-880	-880	-880
Thickness of Layer (mm)	300	300	300	300	300	300
Soil Description	20mm Class 2 Crushed Rock	20mm Class 2 Crushed Rock	20mm Class 2 Crushed Rock	20mm Class 2 Crushed Rock	20mm Class 2 Crushed Rock	20mm Class 2 Crushed Rock
Test Depth (mm)	275	275	275	275	275	275
Fraction Tested (mm)	19.0	19.0	19.0	19.0	19.0	19.0
Oversize (wet basis) %	0	0	0	0	0	0
Oversize (dry basis) %	0	0	0	0	0	0
Curing Hours	2.0	2.0	2.0	2.0	2.0	2.0
Method used to Determine Plasticity	**	**	**	**	**	**
Field Wet Density t/m <sup>3</sup>	2.40	2.41	2.39	2.40	2.41	2.42
Field Moisture Content %	6.7	6.7	6.8	6.9	7.4	6.4
Field Dry Density t/m <sup>3</sup>	2.25	2.26	2.24	2.24	2.24	2.27
Maximum Dry Density t/m <sup>3</sup>	2.24	2.25	2.26	2.26	2.27	2.24
Adjusted Maximum Dry Density t/m <sup>3</sup>	**	**	**	**	**	**
Optimum Moisture Content (OMC) %	8.5	8.5	8.5	8.5	8.0	9.0
Adjusted Optimum Moisture Content (OMC) %	**	**	**	**	**	**
Moisture Variation %	2.0	2.0	1.5	1.5	1.0	2.5
Moisture Ratio %	76.5	77.0	81.0	81.5	90.0	72.0
Density Ratio %	<b>100.5</b>	<b>100.5</b>	<b>99.5</b>	<b>99.5</b>	<b>98.5</b>	<b>101.0</b>
Compaction Method	<b>Modified</b>	<b>Modified</b>	<b>Modified</b>	<b>Modified</b>	<b>Modified</b>	<b>Modified</b>

**Moisture Variation Note:**

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

# Material Test Report

**Report Number:** D22874-1  
**Issue Number:** 1  
**Date Issued:** 30/08/2022  
**Client:** Excell Gray Bruni  
 12 Allied Drive, Tullamarine Vic 3043  
**Project Number:** D22874  
**Project Name:** Riverwalk Estate stage 33 -Drainage  
**Project Location:** Werribee  
**Work Request:** 5027  
**Date Sampled:** 22/08/2022 11:20  
**Dates Tested:** 22/08/2022 - 25/08/2022  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 98% Mod  
**Location:** Riverwalk stage 33 -Drainage  
**Material:** 20mm Class 2 Crushed Rock  
**Material Source:** Holcim-Werribee



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*Nalaka Bandara*

Approved Signatory: Nalaka Bandara  
 Lab Tech

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.2.1 & 5.4.1 & 5.8.1 & 2.1.1						
Sample Number	D22-5027M	D22-5027N	D22-5027O	D22-5027P	D22-5027Q	D22-5027R
Date Tested	22/08/2022	22/08/2022	22/08/2022	22/08/2022	22/08/2022	22/08/2022
Time Tested	13:15	13:25	13:30	13:40	13:50	14:00
Test Request #/Location	Pit 6 -7	Pit 32 -33	Pit 33 -34	Pit 34 38	Pit 34 -35	Pit 37- 39
Chainage (m)	**	**	**	**	**	**
Location Offset (m)	5m from Pit 7	3m from Pit 33	4m from Pit 33	3m from Pit 34	2m from Pit 35	1m from Pit 37
Layer / Reduced Level	-880	-650	-880	-730	-730	-730
Thickness of Layer (mm)	300	300	300	300	300	300
Soil Description	20mm Class 2 Crushed Rock	20mm Class 2 Crushed Rock	20mm Class 2 Crushed Rock	20mm Class 2 Crushed Rock	20mm Class 2 Crushed Rock	20mm Class 2 Crushed Rock
Test Depth (mm)	275	275	275	275	275	275
Fraction Tested (mm)	19.0	19.0	19.0	19.0	19.0	19.0
Oversize (wet basis) %	0	0	0	0	0	0
Oversize (dry basis) %	0	0	0	0	0	0
Curing Hours	2.0	2.0	2.0	2.0	2.0	2.0
Method used to Determine Plasticity	**	**	**	**	**	**
Field Wet Density t/m <sup>3</sup>	2.43	2.42	2.40	2.40	2.43	2.41
Field Moisture Content %	6.2	6.7	6.3	6.1	6.0	6.2
Field Dry Density t/m <sup>3</sup>	2.29	2.27	2.25	2.26	2.29	2.27
Maximum Dry Density t/m <sup>3</sup>	2.25	2.26	2.24	2.23	2.26	2.24
Adjusted Maximum Dry Density t/m <sup>3</sup>	**	**	**	**	**	**
Optimum Moisture Content (OMC) %	8.5	8.5	8.0	8.0	8.0	8.5
Adjusted Optimum Moisture Content (OMC) %	**	**	**	**	**	**
Moisture Variation %	2.5	2.0	2.0	2.0	2.0	2.0
Moisture Ratio %	73.0	77.0	77.5	77.0	74.0	74.5
Density Ratio %	<b>101.5</b>	<b>100.5</b>	<b>100.5</b>	<b>101.5</b>	<b>101.5</b>	<b>101.5</b>
Compaction Method	<b>Modified</b>	<b>Modified</b>	<b>Modified</b>	<b>Modified</b>	<b>Modified</b>	<b>Modified</b>

**Moisture Variation Note:**

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

# Material Test Report


**Report Number:** D22938-1  
**Issue Number:** 1  
**Date Issued:** 16/12/2022  
**Client:** Excell Gray Bruni  
 12 Allied Drive, Tullamarine Vic 3043  
**Project Number:** D22938  
**Project Name:** Riverwalk estate stage 33 - Road Base  
**Project Location:** Werribee  
**Work Request:** 5402  
**Date Sampled:** 09/12/2022 14:50  
**Dates Tested:** 09/12/2022 - 14/12/2022  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 98% Mod  
**Location:** Riverwalk stage 33 - Road Base  
**Material:** 20mm NDCR  
**Material Source:** Hanson - Werribee



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 Approved Signatory: Eranda Hippola  
 Laboratory Manager  
 NATA Accredited Laboratory Number: 15357

## Compaction Control AS 1289 5.2.1 & 5.4.1 & 5.8.1 & 2.1.1

Sample Number	D22-5402A	D22-5402B	D22-5402C	D22-5402D	D22-5402E
Date Tested	08/12/2022	08/12/2022	08/12/2022	08/12/2022	08/12/2022
Time Tested	14:50	14:50	14:50	14:50	14:50
Test Request #/Location	Breezy Circuit	Breezy Circuit	Breezy Circuit	Gokula Street	Gokula Street
Chainage (m)	20.00m	76.00m	350.00m	80.00m	34.00m
Location Offset (m)	2m from LEL	1m from LEL	2m from LEL	2m from LEL	3m from LEL
Layer / Reduced Level	-580mm	-580mm	-580mm	-580mm	-580mm
Thickness of Layer (mm)	150	150	150	150	150
Soil Description	20mm NDCR	20mm NDCR	20mm NDCR	20mm NDCR	20mm NDCR
Test Depth (mm)	125	125	125	125	125
Fraction Tested (mm)	19.0	19.0	19.0	19.0	19.0
Oversize (wet basis) %	0	0	0	0	0
Oversize (dry basis) %	0	0	0	0	0
Curing Hours	2.0	2.0	2.0	2.0	2.0
Method used to Determine Plasticity	**	**	**	**	**
Field Wet Density t/m <sup>3</sup>	2.33	2.34	2.36	2.35	2.33
Field Moisture Content %	9.6	10.2	10.1	9.6	9.1
Field Dry Density t/m <sup>3</sup>	2.13	2.13	2.15	2.15	2.14
Maximum Dry Density t/m <sup>3</sup>	2.09	2.12	2.08	2.13	2.12
Adjusted Maximum Dry Density t/m <sup>3</sup>	**	**	**	**	**
Optimum Moisture Content (OMC) %	11.0	10.5	12.5	10.5	10.0
Adjusted Optimum Moisture Content (OMC) %	**	**	**	**	**
Moisture Variation %	1.5	0.5	2.0	0.5	0.5
Moisture Ratio %	87.0	95.0	82.0	93.5	92.5
Density Ratio %	<b>102.0</b>	<b>100.5</b>	<b>103.0</b>	<b>100.5</b>	<b>100.5</b>
Compaction Method	<b>Modified</b>	<b>Modified</b>	<b>Modified</b>	<b>Modified</b>	<b>Modified</b>

### Moisture Variation Note:

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

# Material Test Report


**Report Number:** D22938-1  
**Issue Number:** 1  
**Date Issued:** 16/12/2022  
**Client:** Excell Gray Bruni  
 12 Allied Drive, Tullamarine Vic 3043  
**Project Number:** D22938  
**Project Name:** Riverwalk estate stage 33 - Road Base  
**Project Location:** Werribee  
**Work Request:** 5402  
**Date Sampled:** 09/12/2022 14:50  
**Dates Tested:** 09/12/2022 - 15/12/2022  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 98% Mod  
**Location:** Riverwalk stage 33 - Road Base  
**Material:** 20mm NDCR  
**Material Source:** Hanson - Werribee



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 Laboratory Manager

NATA Accredited Laboratory Number: 15357

## Compaction Control AS 1289 5.2.1 & 5.4.1 & 5.8.1 & 2.1.1

Sample Number	D22-5402F	D22-5402G	D22-5402H	D22-5402I	D22-5402J
Date Tested	08/12/2022	08/12/2022	08/12/2022	08/12/2022	08/12/2022
Time Tested	14:50	14:50	14:50	14:50	14:50
Test Request #/Location	Moynes Road	Tulsi Avenue	Tulsi Avenue	Tulsi Avenue	Tulsi Avenue
Chainage (m)	140.00m	873.00m	923.00m	180.00m	1028.00m
Location Offset (m)	3m from LEL	3m from LEL	2m from LEL	1m from LEL	2m from LEL
Layer / Reduced Level	-500mm	-730mm	-730mm	-730mm	-730mm
Thickness of Layer (mm)	150	150	150	150	150
Soil Description	20mm NDCR	20mm NDCR	20mm NDCR	20mm NDCR	20mm NDCR
Test Depth (mm)	125	125	125	125	125
Fraction Tested (mm)	19.0	19.0	19.0	19.0	19.0
Oversize (wet basis) %	0	0	0	0	0
Oversize (dry basis) %	0	0	0	0	0
Curing Hours	2.0	2.0	2.0	2.0	2.0
Method used to Determine Plasticity	**	**	**	**	**
Field Wet Density t/m <sup>3</sup>	2.35	2.34	2.34	2.35	2.34
Field Moisture Content %	9.1	10.6	10.0	9.3	9.4
Field Dry Density t/m <sup>3</sup>	2.16	2.12	2.13	2.15	2.14
Maximum Dry Density t/m <sup>3</sup>	2.13	2.12	2.13	2.10	2.12
Adjusted Maximum Dry Density t/m <sup>3</sup>	**	**	**	**	**
Optimum Moisture Content (OMC) %	11.0	11.0	11.0	11.5	10.5
Adjusted Optimum Moisture Content (OMC) %	**	**	**	**	**
Moisture Variation %	2.0	0.5	1.0	2.0	1.5
Moisture Ratio %	82.5	95.0	92.5	82.5	88.0
Density Ratio %	<b>101.5</b>	<b>100.0</b>	<b>99.5</b>	<b>102.5</b>	<b>101.0</b>
Compaction Method	<b>Modified</b>	<b>Modified</b>	<b>Modified</b>	<b>Modified</b>	<b>Modified</b>

### Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

# Material Test Report


**Report Number:** D22938-2  
**Issue Number:** 1  
**Date Issued:** 20/12/2022  
**Client:** Excell Gray Bruni  
 12 Allied Drive, Tullamarine Vic 3043  
**Project Number:** D22938  
**Project Name:** Riverwalk estate stage 33 - Road Base  
**Project Location:** Werribee  
**Work Request:** 5419  
**Date Sampled:** 13/12/2022 14:30  
**Dates Tested:** 14/12/2022 - 19/12/2022  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 98% Mod  
**Location:** Riverwalk Estate stage 33 - Road base  
**Material:** 20mm NDCR  
**Material Source:** Hanson - Werribee



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 NATA Accredited Laboratory Number: 15357

## Compaction Control AS 1289 5.2.1 & 5.4.1 & 5.8.1 & 2.1.1

Sample Number	D22-5419A	D22-5419B	D22-5419C	D22-5419D
Date Tested	13/12/2022	13/12/2022	13/12/2022	13/12/2022
Time Tested	14:30	14:30	14:30	14:30
Test Request #/Location	Rawson Circuit	Rawson Circuit	Prana Way	Tulsi Avenue
Chainage (m)	446.00	397.00	379.00	730.00
Location Offset (m)	2m from LEL	1m from LEL	3m from LEL	2m from LEL
Layer / Reduced Level	-580mm	-580mm	-580mm	-580mm
Thickness of Layer (mm)	150	150	150	150
Soil Description	20mm NDCR	20mm NDCR	20mm NDCR	20mm NDCR
Test Depth (mm)	125	125	125	125
Fraction Tested (mm)	19.0	19.0	19.0	19.0
Oversize (wet basis) %	0	0	0	0
Oversize (dry basis) %	0	0	0	0
Curing Hours	2.0	2.0	2.0	2.0
Method used to Determine Plasticity	**	**	**	**
Field Wet Density t/m <sup>3</sup>	2.38	2.36	2.37	2.38
Field Moisture Content %	15.3	14.8	15.3	16.0
Field Dry Density t/m <sup>3</sup>	2.07	2.06	2.06	2.05
Maximum Dry Density t/m <sup>3</sup>	2.10	2.07	2.08	2.10
Adjusted Maximum Dry Density t/m <sup>3</sup>	**	**	**	**
Optimum Moisture Content (OMC) %	11.5	11.5	12.5	12.5
Adjusted Optimum Moisture Content (OMC) %	**	**	**	**
Moisture Variation %	-3.5	-3.0	-3.0	-3.5
Moisture Ratio %	130.5	127.5	122.0	127.5
Density Ratio %	<b>98.5</b>	<b>99.5</b>	<b>99.0</b>	<b>98.0</b>
Compaction Method	<b>Modified</b>	<b>Modified</b>	<b>Modified</b>	<b>Modified</b>

### Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

# Material Test Report


**Report Number:** D22938-2  
**Issue Number:** 1  
**Date Issued:** 20/12/2022  
**Client:** Excell Gray Bruni  
 12 Allied Drive, Tullamarine Vic 3043  
**Project Number:** D22938  
**Project Name:** Riverwalk estate stage 33 - Road Base  
**Project Location:** Werribee  
**Work Request:** 5419  
**Date Sampled:** 13/12/2022 14:30  
**Dates Tested:** 14/12/2022 - 19/12/2022  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 98% Mod  
**Location:** Riverwalk Estate stage 33 - Road base  
**Material:** 20mm NDCR  
**Material Source:** Hanson - Werribee



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## Compaction Control AS 1289 5.2.1 & 5.4.1 & 5.8.1 & 2.1.1

Sample Number	D22-5419E	D22-5419F	D22-5419G	
Date Tested	13/12/2022	13/12/2022	13/12/2022	
Time Tested	14:30	14:30	14:30	
Test Request #/Location	Tulsi Avenue	District Avenue	Bonang Road	
Chainage (m)	813.00	147.00	147.00	
Location Offset (m)	1m from LEL	3m from LEL	4m from LEL	
Layer / Reduced Level	-580mm	-500mm	-500mm	
Thickness of Layer (mm)	150	150	150	
Soil Description	20mm NDCR	20mm NDCR	20mm NDCR	
Test Depth (mm)	125	125	125	
Fraction Tested (mm)	19.0	19.0	19.0	
Oversize (wet basis) %	0	0	0	
Oversize (dry basis) %	0	0	0	
Curing Hours	2.1	2.3	2.0	
Method used to Determine Plasticity	**	**	**	
Field Wet Density t/m <sup>3</sup>	2.36	2.39	2.39	
Field Moisture Content %	16.5	18.5	16.4	
Field Dry Density t/m <sup>3</sup>	2.03	2.02	2.06	
Maximum Dry Density t/m <sup>3</sup>	2.03	2.03	2.08	
Adjusted Maximum Dry Density t/m <sup>3</sup>	**	**	**	
Optimum Moisture Content (OMC) %	14.5	15.5	15.0	
Adjusted Optimum Moisture Content (OMC) %	**	**	**	
Moisture Variation %	-2.0	-3.0	-1.5	
Moisture Ratio %	113.5	119.5	110.5	
Density Ratio %	<b>100.0</b>	<b>99.5</b>	<b>99.0</b>	
Compaction Method	<b>Modified</b>	<b>Modified</b>	<b>Modified</b>	

### Moisture Variation Note:

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



# Material Test Report

**Report Number:** D22938-3  
**Issue Number:** 1  
**Date Issued:** 13/02/2023  
**Client:** Excell Gray Bruni  
 12 Allied Drive, Tullamarine Vic 3043  
**Project Number:** D22938  
**Project Name:** Riverwalk Estate Stage 33 - Road Base  
**Project Location:** Werribee  
**Work Request:** 5555  
**Date Sampled:** 07/02/2023 12:45  
**Dates Tested:** 07/02/2023 - 09/02/2023  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 98% Mod  
**Site Selection:** Selected by Client  
**Location:** Riverwalk Estate stage 33 - Road base  
**Material:** 40mm NDCR - Type A  
**Material Source:** Mountain View Quarry



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Approved Signatory: Eranda Hippola  
 Laboratory Manager

NATA Accredited Laboratory Number: 15357

## Compaction Control AS 1289 5.2.1 & 5.4.1 & 5.8.1 & 2.1.1

Sample Number	D23-5555A	D23-5555B	D23-5555C	D23-5555D	D23-5555E	D23-5555F
Date Tested	07/02/2023	07/02/2023	07/02/2023	07/02/2023	07/02/2023	07/02/2023
Time Tested	12:45	12:50	13:00	13:05	13:10	13:20
Test Request #/Location	Tulsi Avenue	Tulsi Avenue	Tulsi Avenue	Tulsi Avenue	Tulsi Avenue	District Avenue
Chainage (m)	805.00	854.00	907.00	955.00	1008.00	230.00
Location Offset (m)	2m from LEL	4m from LEL	2m from LEL	2m from LEL	4m from LEL	3m from LEL
Layer / Reduced Level	-580mm	-580mm	-580mm	-580mm	-580mm	-430mm
Thickness of Layer (mm)	150	150	150	150	150	150
Soil Description	40mm NDCR - Type A	40mm NDCR - Type A	40mm NDCR - Type A	40mm NDCR - Type A	40mm NDCR - Type A	40mm NDCR - Type A
Test Depth (mm)	125	125	125	125	125	125
Fraction Tested (mm)	19.0	19.0	19.0	19.0	19.0	19.0
Oversize (wet basis) %	10	10	10	10	10	9
Oversize (dry basis) %	11	10	10	11	10	9
Curing Hours	2.0	2.0	2.0	2.0	2.0	2.0
Method used to Determine Plasticity	**	**	**	**	**	**
Field Wet Density t/m <sup>3</sup>	2.36	2.37	2.38	2.39	2.38	2.36
Field Moisture Content %	7.7	7.8	8.7	9.1	8.9	9.2
Field Dry Density t/m <sup>3</sup>	2.19	2.20	2.19	2.19	2.18	2.16
Maximum Dry Density t/m <sup>3</sup>	**	**	**	**	**	**
Adjusted Maximum Dry Density t/m <sup>3</sup>	2.12	2.11	2.13	2.20	2.15	2.13
Optimum Moisture Content (OMC) %	**	**	**	**	**	**
Adjusted Optimum Moisture Content (OMC) %	10.0	10.0	10.0	9.5	9.5	10.0
Moisture Variation %	2.5	2.0	1.0	0.5	0.5	0.5
Moisture Ratio %	76.5	80.0	88.5	94.5	94.0	94.5
Density Ratio %	<b>103.0</b>	<b>104.0</b>	<b>102.5</b>	<b>99.5</b>	<b>101.5</b>	<b>101.0</b>
Compaction Method	<b>Modified</b>	<b>Modified</b>	<b>Modified</b>	<b>Modified</b>	<b>Modified</b>	<b>Modified</b>

### Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC



# Material Test Report

**Report Number:** D22938-3  
**Issue Number:** 1  
**Date Issued:** 13/02/2023  
**Client:** Excell Gray Bruni  
 12 Allied Drive, Tullamarine Vic 3043  
**Project Number:** D22938  
**Project Name:** Riverwalk Estate Stage 33 - Road Base  
**Project Location:** Werribee  
**Work Request:** 5555  
**Date Sampled:** 07/02/2023 12:45  
**Dates Tested:** 07/02/2023 - 10/02/2023  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 98% Mod  
**Site Selection:** Selected by Client  
**Location:** Riverwalk Estate stage 33 - Road base  
**Material:** 40mm NDCR - Type A  
**Material Source:** Mountain View Quarry



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NATA Accredited Laboratory Number: 15357

## Compaction Control AS 1289 5.2.1 & 5.4.1 & 5.8.1 & 2.1.1

Sample Number	D23-5555G	D23-5555H	D23-5555I	D23-5555J	D23-5555K	D23-5555L
Date Tested	07/02/2023	07/02/2023	07/02/2023	07/02/2023	07/02/2023	07/02/2023
Time Tested	13:25	13:30	13:40	13:50	13:55	14:00
Test Request #/Location	Bonang Road	Moyne Road	Breezy Circuit	Breezy Circuit	Gokula Road	Gokula Road
Chainage (m)	130.00	130.00	13.00	64.00	13.00	64.00
Location Offset (m)	4m from LEL	3m from LEL	2m from LEL	4m from LEL	3m from LEL	3m from LEL
Layer / Reduced Level	-350mm	-350mm	-430mm	-430mm	-430mm	-430mm
Thickness of Layer (mm)	150	150	150	150	150	150
Soil Description	40mm NDCR - Type A	40mm NDCR - Type A	40mm NDCR - Type A	40mm NDCR - Type A	40mm NDCR - Type A	40mm NDCR - Type A
Test Depth (mm)	125	125	125	125	125	125
Fraction Tested (mm)	19.0	19.0	19.0	19.0	19.0	19.0
Oversize (wet basis) %	9	10	9	10	10	10
Oversize (dry basis) %	10	11	9	10	10	11
Curing Hours	2.0	2.0	2.0	2.0	2.0	2.0
Method used to Determine Plasticity	**	**	**	**	**	**
Field Wet Density t/m <sup>3</sup>	2.38	2.39	2.37	2.36	2.36	2.37
Field Moisture Content %	8.8	8.1	8.0	8.9	7.9	7.7
Field Dry Density t/m <sup>3</sup>	2.19	2.21	2.19	2.17	2.18	2.21
Maximum Dry Density t/m <sup>3</sup>	**	**	**	**	**	**
Adjusted Maximum Dry Density t/m <sup>3</sup>	2.16	2.14	2.13	2.17	2.14	2.14
Optimum Moisture Content (OMC) %	**	**	**	**	**	**
Adjusted Optimum Moisture Content (OMC) %	9.5	9.5	10.0	9.0	9.0	9.5
Moisture Variation %	0.5	1.5	2.0	0.0	1.0	2.0
Moisture Ratio %	92.0	85.5	80.5	97.5	87.5	79.5
Density Ratio %	<b>101.5</b>	<b>103.0</b>	<b>103.0</b>	<b>99.5</b>	<b>102.0</b>	<b>103.0</b>
Compaction Method	<b>Modified</b>	<b>Modified</b>	<b>Modified</b>	<b>Modified</b>	<b>Modified</b>	<b>Modified</b>

### Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

# Material Test Report


**Report Number:** D22938-4  
**Issue Number:** 1  
**Date Issued:** 14/02/2023  
**Client:** Excell Gray Bruni  
 12 Allied Drive, Tullamarine Vic 3043  
**Project Number:** D22938  
**Project Name:** Riverwalk Estate Stage 33 - Road Base  
**Project Location:** Werribee  
**Work Request:** 5565  
**Date Sampled:** 09/02/2023 08:00  
**Dates Tested:** 09/02/2023 - 13/02/2023  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 98% STD  
**Location:** Riverwalk stage 33 - Road Base  
**Material:** 20mm Class 4 Crushed Rock  
**Material Source:** Holcim - Werribee



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 Laboratory Manager  
 NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.2.1 & 5.4.1 & 5.8.1 & 2.1.1					
Sample Number	D23-5565A	D23-5565B	D23-5565C	D23-5565D	D23-5565E
Date Tested	09/02/2023	09/02/2023	09/02/2023	09/02/2023	09/02/2023
Time Tested	08:00	08:00	08:00	08:00	08:00
Test Request #/Location	Tulsi Avenue	Tulsi Avenue	Tulsi Avenue	Tulsi Avenue	Tulsi Avenue
Chainage (m)	805	854	907	955	1008
Location Offset (m)	2m from LEL	3m from LEL	4m from LEL	1m from LEL	4m from LEL
Layer / Reduced Level	-360mm	-360mm	-360mm	-360mm	-360mm
Thickness of Layer (mm)	190	190	190	190	190
Soil Description	20mm Class 4 Crushed Rock	20mm Class 4 Crushed Rock	20mm Class 4 Crushed Rock	20mm Class 4 Crushed Rock	20mm Class 4 Crushed Rock
Test Depth (mm)	175	175	175	175	175
Fraction Tested (mm)	19.0	19.0	19.0	19.0	19.0
Oversize (wet basis) %	0	0	0	0	0
Oversize (dry basis) %	0	0	0	0	0
Curing Hours	2.0	2.0	2.0	2.0	2.0
Method used to Determine Plasticity	**	**	**	**	**
Field Wet Density t/m <sup>3</sup>	2.42	2.42	2.43	2.41	2.42
Field Moisture Content %	7.6	6.1	6.0	6.7	5.9
Field Dry Density t/m <sup>3</sup>	2.25	2.28	2.30	2.26	2.28
Maximum Dry Density t/m <sup>3</sup>	2.27	2.25	2.26	2.25	2.26
Adjusted Maximum Dry Density t/m <sup>3</sup>	**	**	**	**	**
Optimum Moisture Content (OMC) %	8.0	8.5	8.0	8.5	7.5
Adjusted Optimum Moisture Content (OMC) %	**	**	**	**	**
Moisture Variation %	0.5	2.5	2.0	2.0	1.5
Moisture Ratio %	94.5	72.5	76.0	78.0	80.0
Density Ratio %	<b>99.0</b>	<b>101.5</b>	<b>101.5</b>	<b>100.5</b>	<b>101.0</b>
Compaction Method	<b>Modified</b>	<b>Modified</b>	<b>Modified</b>	<b>Modified</b>	<b>Modified</b>

**Moisture Variation Note:**

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

# Material Test Report

**Report Number:** D22938-5  
**Issue Number:** 1  
**Date Issued:** 16/02/2023  
**Client:** Excell Gray Bruni  
 12 Allied Drive, Tullamarine Vic 3043  
**Project Number:** D22938  
**Project Name:** Riverwalk Estate Stage 33 - Road Base  
**Project Location:** Werribee  
**Work Request:** 5572  
**Date Sampled:** 10/02/2023 14:15  
**Dates Tested:** 10/02/2023 - 15/02/2023  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 98% Mod  
**Site Selection:** Selected by Client  
**Location:** Riverwalk stage 33 - Road Base  
**Material:** 20mm Class 3 Crushed Rock  
**Material Source:** Holcim Werribee



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 Laboratory Manager

NATA Accredited Laboratory Number: 15357

## Compaction Control AS 1289 5.2.1 & 5.4.1 & 5.8.1 & 2.1.1

Sample Number	D23-5572A	D23-5572B	
Date Tested	13/02/2023	13/02/2023	
Time Tested	03:10	03:15	
Test Request #/Location	Bonang Road	Moyne Road	
Chainage (m)	145.00	140.00	
Location Offset (m)	2m from LEL	4m from LEL	
Layer / Reduced Level	-190	-190	
Thickness of Layer (mm)	160	160	
Soil Description	20mm Class 3 Crushed Rock	20mm Class 3 Crushed Rock	
Test Depth (mm)	150	150	
Fraction Tested (mm)	19.0	19.0	
Oversize (wet basis) %	0	0	
Oversize (dry basis) %	0	0	
Curing Hours	2.0	2.0	
Method used to Determine Plasticity	**	**	
Field Wet Density t/m <sup>3</sup>	2.41	2.42	
Field Moisture Content %	7.0	6.8	
Field Dry Density t/m <sup>3</sup>	2.25	2.26	
Maximum Dry Density t/m <sup>3</sup>	2.26	2.24	
Adjusted Maximum Dry Density t/m <sup>3</sup>	**	**	
Optimum Moisture Content (OMC) %	8.0	8.5	
Adjusted Optimum Moisture Content (OMC) %	**	**	
Moisture Variation %	1.0	2.0	
Moisture Ratio %	86.5	79.0	
Density Ratio %	<b>100.0</b>	<b>100.5</b>	
Compaction Method	<b>Modified</b>	<b>Modified</b>	

### Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

# Material Test Report


**Report Number:** D22938-6  
**Issue Number:** 1  
**Date Issued:** 16/02/2023  
**Client:** Excell Gray Bruni  
 12 Allied Drive, Tullamarine Vic 3043  
**Project Number:** D22938  
**Project Name:** Riverwalk Estate Stage 33 - Road Base  
**Project Location:** Werribee  
**Work Request:** 5571  
**Date Sampled:** 10/02/2023 14:15  
**Dates Tested:** 10/02/2023 - 15/02/2023  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 98% Mod  
**Location:** Riverwalk stage 33 - Road Base  
**Material:** 20mm Class 4 Crushed Rock  
**Material Source:** Holcim Werribee



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Compaction Control AS 1289 5.2.1 & 5.4.1 & 5.4.2 & 5.8.1 & 2.1.1				
Sample Number	D23-5571G	D23-5571H	D23-5571I	D23-5571J
Date Tested	10/02/2023	10/02/2023	10/02/2023	10/02/2023
Time Tested	14:15	14:15	14:15	14:15
Test Request #/Location	Rawson Circuit	Rawson Circuit	Breezy Circuit	Breezy Circuit
Chainage (m)	446.00m	397.00m	35.00m	80.00m
Location Offset (m)	2m from LEL	2m from LEL	2m from LEL	4m from LEL
Layer / Reduced Level	-310mm	-310mm	-310mm	-310mm
Thickness of Layer (mm)	120	120	120	120
Soil Description	20mm Class 4 Crushed Rock	20mm Class 4 Crushed Rock	20mm Class 4 Crushed Rock	20mm Class 4 Crushed Rock
Test Depth (mm)	100	100	100	100
Fraction Tested (mm)	19.0	19.0	19.0	19.0
Oversize (wet basis) %	**	**	**	**
Oversize (dry basis) %	**	**	**	**
Curing Hours	**	**	**	**
Method used to Determine Plasticity	**	**	**	**
Field Wet Density t/m <sup>3</sup>	2.40	2.39	2.41	2.39
Field Moisture Content %	6.2	6.1	6.1	5.8
Field Dry Density t/m <sup>3</sup>	2.26	2.25	2.28	2.26
Maximum Dry Density t/m <sup>3</sup>	2.27	2.27	2.27	2.27
Adjusted Maximum Dry Density t/m <sup>3</sup>	**	**	**	**
Optimum Moisture Content (OMC) %	7.5	7.5	7.5	7.5
Adjusted Optimum Moisture Content (OMC) %	**	**	**	**
Date Values Assigned	15/02/2023	15/02/2023	15/02/2023	15/02/2023
Assigned Value Report #	WR 5571	WR 5571	WR 5571	WR 5571
Moisture Variation %	1.5	1.5	1.5	1.5
Moisture Ratio %	83.0	81.5	80.5	77.0
Density Ratio %	<b>99.5</b>	<b>99.5</b>	<b>100.5</b>	<b>99.5</b>
Compaction Method	<b>Modified</b>	<b>Modified</b>	<b>Modified</b>	<b>Modified</b>

**Moisture Variation Note:**

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

# Material Test Report


**Report Number:** D22938-6  
**Issue Number:** 1  
**Date Issued:** 16/02/2023  
**Client:** Excell Gray Bruni  
 12 Allied Drive, Tullamarine Vic 3043  
**Project Number:** D22938  
**Project Name:** Riverwalk Estate Stage 33 - Road Base  
**Project Location:** Werribee  
**Work Request:** 5571  
**Date Sampled:** 10/02/2023 14:15  
**Dates Tested:** 10/02/2023 - 15/02/2023  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 98% Mod  
**Location:** Riverwalk stage 33 - Road Base  
**Material:** 20mm Class 4 Crushed Rock  
**Material Source:** Holcim Werribee



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Compaction Control AS 1289 5.2.1 & 5.4.1 & 5.4.2 & 5.8.1 & 2.1.1			
Sample Number	D23-5571K	D23-5571L	D23-5571M
Date Tested	10/02/2023	10/02/2023	10/02/2023
Time Tested	14:15	14:15	14:15
Test Request #/Location	Gokula Street	Gokula Street	District Avenue
Chainage (m)	34.00m	64.00m	228.00m
Location Offset (m)	3m from LEL	5m from LEL	4m from LEL
Layer / Reduced Level	-310mm	-310mm	-310mm
Thickness of Layer (mm)	120	120	120
Soil Description	20mm Class 4 Crushed Rock	20mm Class 4 Crushed Rock	20mm Class 4 Crushed Rock
Test Depth (mm)	100	100	100
Fraction Tested (mm)	19.0	19.0	19.0
Oversize (wet basis) %	**	**	**
Oversize (dry basis) %	**	**	**
Curing Hours	**	**	**
Method used to Determine Plasticity	**	**	**
Field Wet Density t/m <sup>3</sup>	2.43	2.44	2.44
Field Moisture Content %	6.0	6.6	6.6
Field Dry Density t/m <sup>3</sup>	2.29	2.29	2.28
Maximum Dry Density t/m <sup>3</sup>	2.27	2.27	2.27
Adjusted Maximum Dry Density t/m <sup>3</sup>	**	**	**
Optimum Moisture Content (OMC) %	7.5	7.5	7.5
Adjusted Optimum Moisture Content (OMC) %	**	**	**
Date Values Assigned	15/02/2023	15/02/2023	15/02/2023
Assigned Value Report #	WR 5571	WR 5571	WR 5571
Moisture Variation %	1.5	1.0	1.0
Moisture Ratio %	80.0	88.0	88.5
Density Ratio %	<b>101.0</b>	<b>100.5</b>	<b>100.5</b>
Compaction Method	<b>Modified</b>	<b>Modified</b>	<b>Modified</b>

**Moisture Variation Note:**

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

# Material Test Report

**Report Number:** D22938-7  
**Issue Number:** 1  
**Date Issued:** 17/02/2023  
**Client:** Excell Gray Bruni  
 12 Allied Drive, Tullamarine Vic 3043  
**Project Number:** D22938  
**Project Name:** Riverwalk Estate Stage 33 - Road Base  
**Project Location:** Werribee  
**Work Request:** 5566  
**Date Sampled:** 09/02/2023 08:20  
**Dates Tested:** 09/02/2023 - 16/02/2023  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 98% Mod  
**Location:** Riverwalk stage 33 - Road Base  
**Material:** 40mm NDCR  
**Material Source:** MVQ



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 Laboratory Manager

NATA Accredited Laboratory Number: 15357

## Compaction Control AS 1289 5.2.1 & 5.4.1 & 5.8.1 & 2.1.1

Sample Number	D23-5566A	D23-5566B	
Date Tested	09/02/2023	09/02/2023	
Time Tested	08:20	08:20	
Test Request #/Location	Rawson Circuit	Rawson Circuit	
Chainage (m)	405m	446m	
Location Offset (m)	3m from LEL	1m from LEL	
Layer / Reduced Level	-430mm	-430mm	
Thickness of Layer (mm)	150	150	
Soil Description	40mm NDCR	40mm NDCR	
Test Depth (mm)	125	125	
Fraction Tested (mm)	19.0	19.0	
Oversize (wet basis) %	10	10	
Oversize (dry basis) %	11	11	
Curing Hours	2.0	2.0	
Method used to Determine Plasticity	**	**	
Field Wet Density t/m <sup>3</sup>	2.38	2.39	
Field Moisture Content %	7.6	7.9	
Field Dry Density t/m <sup>3</sup>	2.21	2.21	
Maximum Dry Density t/m <sup>3</sup>	**	**	
Adjusted Maximum Dry Density t/m <sup>3</sup>	2.14	2.14	
Optimum Moisture Content (OMC) %	**	**	
Adjusted Optimum Moisture Content (OMC) %	10.0	10.0	
Moisture Variation %	2.5	2.0	
Moisture Ratio %	76.0	80.5	
Density Ratio %	<b>103.5</b>	<b>103.0</b>	
Compaction Method	<b>Modified</b>	<b>Modified</b>	

### Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

# Material Test Report

**Report Number:** D22938-8  
**Issue Number:** 1  
**Date Issued:** 23/02/2023  
**Client:** Excell Gray Bruni  
 12 Allied Drive, Tullamarine Vic 3043  
**Project Number:** D22938  
**Project Name:** Riverwalk Estate Stage 33 - Road Base  
**Project Location:** Werribee  
**Work Request:** 5591  
**Date Sampled:** 16/02/2023 13:00  
**Dates Tested:** 16/02/2023 - 22/02/2023  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 98% Mod  
**Location:** Riverwalk stage 33 - Road Base  
**Material:** 20mm Class 3 Crushed Rock  
**Material Source:** Holcim - Werribee



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*Nalaka Bandara*

Approved Signatory: Nalaka Bandara  
Lab Tech

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.2.1 & 5.4.1 & 5.4.2 & 5.8.1 & 2.1.1				
Sample Number	D23-5591A	D23-5591B	D23-5591C	D23-5591D
Date Tested	16/02/2023	16/02/2023	16/02/2023	16/02/2023
Time Tested	13:00	13:00	13:00	13:00
Test Request #/Location	District Avenue	Rawson Circuit	Rawson Circuit	Breezy Circuit
Chainage (m)	228m	446m	397m	34m
Location Offset (m)	1m from LEL	1m from LEL	2m from LEL	3m from LEL
Layer / Reduced Level	-190mm	-190mm	-190mm	-190mm
Thickness of Layer (mm)	120	120	120	120
Soil Description	20mm Class 3 Crushed Rock	20mm Class 3 Crushed Rock	20mm Class 3 Crushed Rock	20mm Class 3 Crushed Rock
Test Depth (mm)	100	100	100	100
Fraction Tested (mm)	19.0	19.0	19.0	19.0
Oversize (wet basis) %	**	**	**	**
Oversize (dry basis) %	**	**	**	**
Curing Hours	**	**	**	**
Method used to Determine Plasticity	**	**	**	**
Field Wet Density t/m <sup>3</sup>	2.41	2.42	2.42	2.40
Field Moisture Content %	5.1	5.6	5.2	5.7
Field Dry Density t/m <sup>3</sup>	2.29	2.29	2.30	2.28
Maximum Dry Density t/m <sup>3</sup>	2.25	2.25	2.25	2.25
Adjusted Maximum Dry Density t/m <sup>3</sup>	**	**	**	**
Optimum Moisture Content (OMC) %	8.5	8.5	8.5	8.5
Adjusted Optimum Moisture Content (OMC) %	**	**	**	**
Date Values Assigned	23/02/2023	23/02/2023	23/02/2023	23/02/2023
Assigned Value Report #	WR 5590	WR 5590	WR 5590	WR 5590
Moisture Variation %	3.5	3.0	3.5	3.0
Moisture Ratio %	60.5	66.0	61.5	66.5
Density Ratio %	<b>102.0</b>	<b>101.5</b>	<b>102.5</b>	<b>101.0</b>
Compaction Method	<b>Modified</b>	<b>Modified</b>	<b>Modified</b>	<b>Modified</b>

**Moisture Variation Note:**

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



# Material Test Report

**Report Number:** D22938-8  
**Issue Number:** 1  
**Date Issued:** 23/02/2023  
**Client:** Excell Gray Bruni  
 12 Allied Drive, Tullamarine Vic 3043  
**Project Number:** D22938  
**Project Name:** Riverwalk Estate Stage 33 - Road Base  
**Project Location:** Werribee  
**Work Request:** 5591  
**Date Sampled:** 16/02/2023 13:00  
**Dates Tested:** 16/02/2023 - 22/02/2023  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 98% Mod  
**Location:** Riverwalk stage 33 - Road Base  
**Material:** 20mm Class 3 Crushed Rock  
**Material Source:** Holcim - Werribee



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Approved Signatory: Nalaka Bandara  
 Lab Tech

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.2.1 & 5.4.1 & 5.4.2 & 5.8.1 & 2.1.1			
Sample Number	D23-5591E	D23-5591F	D23-5591G
Date Tested	16/02/2023	16/02/2023	16/02/2023
Time Tested	13:00	13:00	13:00
Test Request #/Location	Breezy Circuit	Gokula Street	Gokula Street
Chainage (m)	80m	34m	80m
Location Offset (m)	2m from LEL	1m from LEL	3m from LEL
Layer / Reduced Level	-190mm	-190mm	-190mm
Thickness of Layer (mm)	120	120	120
Soil Description	20mm Class 3 Crushed Rock	20mm Class 3 Crushed Rock	20mm Class 3 Crushed Rock
Test Depth (mm)	100	100	100
Fraction Tested (mm)	19.0	19.0	19.0
Oversize (wet basis) %	**	**	**
Oversize (dry basis) %	**	**	**
Curing Hours	**	**	**
Method used to Determine Plasticity	**	**	**
Field Wet Density t/m <sup>3</sup>	2.43	2.42	2.41
Field Moisture Content %	5.2	5.6	5.7
Field Dry Density t/m <sup>3</sup>	2.31	2.30	2.28
Maximum Dry Density t/m <sup>3</sup>	2.25	2.25	2.25
Adjusted Maximum Dry Density t/m <sup>3</sup>	**	**	**
Optimum Moisture Content (OMC) %	8.5	8.5	8.5
Adjusted Optimum Moisture Content (OMC) %	**	**	**
Date Values Assigned	23/02/2023	23/02/2023	23/02/2023
Assigned Value Report #	WR 5590	WR 5590	WR 5590
Moisture Variation %	3.5	3.0	3.0
Moisture Ratio %	61.5	66.5	67.0
Density Ratio %	<b>102.5</b>	<b>102.0</b>	<b>101.5</b>
Compaction Method	<b>Modified</b>	<b>Modified</b>	<b>Modified</b>

**Moisture Variation Note:**

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



# Material Test Report


**Report Number:** D22938-9  
**Issue Number:** 1  
**Date Issued:** 24/02/2023  
**Client:** Excell Gray Bruni  
 12 Allied Drive, Tullamarine Vic 3043  
**Project Number:** D22938  
**Project Name:** Riverwalk Estate Stage 33 - Road Base  
**Project Location:** Werribee  
**Work Request:** 5590  
**Date Sampled:** 16/02/2023 12:30  
**Dates Tested:** 16/02/2023 - 21/02/2023  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 98% Mod  
**Location:** Riverwalk stage 33 - Road base  
**Material:** 20mm Class 3 Crushed Rock  
**Material Source:** Holcim - werribee



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 Approved Signatory: Eranda Hippola  
 Laboratory Manager  
 NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.2.1 & 5.4.1 & 5.4.2 & 5.8.1 & 2.1.1					
Sample Number	D23-5590G	D23-5590H	D23-5590I	D23-5590J	D23-5590K
Date Tested	16/02/2023	16/02/2023	16/02/2023	16/02/2023	16/02/2023
Time Tested	12:30	12:30	12:30	12:30	12:30
Test Request #/Location	Tulsi Avenue	Tulsi Avenue	Tulsi Avenue	Tulsi Avenue	Tulsi Avenue
Chainage (m)	805	854	907	968	1015
Location Offset (m)	2m from LEL	1m from LEL	3m from LEL	1m from LEL	2m from LEL
Layer / Reduced Level	-190mm	-190mm	-190mm	-190mm	-190mm
Thickness of Layer (mm)	200	200	200	200	200
Soil Description	20mm Class 3 Crushed Rock	20mm Class 3 Crushed Rock	20mm Class 3 Crushed Rock	20mm Class 3 Crushed Rock	20mm Class 3 Crushed Rock
Test Depth (mm)	175	175	175	175	175
Fraction Tested (mm)	19.0	19.0	19.0	19.0	19.0
Oversize (wet basis) %	**	**	**	**	**
Oversize (dry basis) %	**	**	**	**	**
Curing Hours	**	**	**	**	**
Method used to Determine Plasticity	**	**	**	**	**
Field Wet Density t/m <sup>3</sup>	2.42	2.42	2.41	2.41	2.42
Field Moisture Content %	5.6	5.5	6.0	5.8	5.3
Field Dry Density t/m <sup>3</sup>	2.29	2.29	2.27	2.28	2.30
Maximum Dry Density t/m <sup>3</sup>	2.25	2.25	2.25	2.25	2.25
Adjusted Maximum Dry Density t/m <sup>3</sup>	**	**	**	**	**
Optimum Moisture Content (OMC) %	8.5	8.5	8.5	8.5	8.5
Adjusted Optimum Moisture Content (OMC) %	**	**	**	**	**
Date Values Assigned	23/02/2023	23/02/2023	23/02/2023	23/02/2023	23/02/2023
Assigned Value Report #	WR 5590	WR 5590	WR 5590	WR 5590	WR 5590
Moisture Variation %	3.0	3.0	2.5	2.5	3.0
Moisture Ratio %	65.5	65.0	70.0	68.5	62.5
Density Ratio %	<b>102.0</b>	<b>101.5</b>	<b>101.0</b>	<b>101.5</b>	<b>102.0</b>
Compaction Method	<b>Modified</b>	<b>Modified</b>	<b>Modified</b>	<b>Modified</b>	<b>Modified</b>

**Moisture Variation Note:**

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

# Material Test Report

**Report Number:** D22938-10  
**Issue Number:** 1  
**Date Issued:** 19/04/2023  
**Client:** Excell Gray Bruni  
 12 Allied Drive, Tullamarine Vic 3043  
**Project Number:** D22938  
**Project Name:** Riverwalk Estate Stage 33 - Road Base  
**Project Location:** Werribee  
**Work Request:** 5795  
**Date Sampled:** 14/04/2023 13:32  
**Dates Tested:** 14/04/2023 - 17/04/2023  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 98% Mod  
**Location:** Riverwalk Estate Stage 33 - Roadbase  
**Material:** 20mm Class 2 Crushed Rock  
**Material Source:** Holcim - Werribee



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 Laboratory Manager

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.2.1 & 5.4.1 & 5.8.1 & 2.1.1						
Sample Number	D23-5795A	D23-5795B	D23-5795C	D23-5795D	D23-5795E	D23-5795F
Date Tested	14/04/2023	14/04/2023	14/04/2023	14/04/2023	14/04/2023	14/04/2023
Time Tested	13:32	13:32	13:32	13:32	13:32	13:32
Test Request #/Location	RAWSON CIRCUIT	RAWSON CIRCUIT	BREEZY CIRCUIT	BREEZY CIRCUIT	GOKULA STREET	GOKULA STREET
Chainage (m)	446.350m	397.350m	34.450m	80.450m	34.450m	80.450m
Location Offset (m)	3m from LEL	3m from LEL	4m from LEL	5m from LEL	2m from LEL	2m from LEL
Elevation (m)	- 60 mm	- 60 mm	- 60 mm	- 60 mm	- 60 mm	- 60 mm
Layer / Reduced Level	Roadbase	Roadbase	Roadbase	Roadbase	Roadbase	Roadbase
Thickness of Layer (mm)	130	130	130	130	130	130
Soil Description	20mm Class 2 Crushed Rock	20mm Class 2 Crushed Rock	20mm Class 2 Crushed Rock	20mm Class 2 Crushed Rock	20mm Class 2 Crushed Rock	20mm Class 2 Crushed Rock
Test Depth (mm)	100	100	100	100	100	100
Fraction Tested (mm)	19.0	19.0	19.0	19.0	19.0	19.0
Oversize (wet basis) %	0	0	0	0	0	0
Oversize (dry basis) %	0	0	0	0	0	0
Curing Hours	2.0	2.0	2.0	2.0	2.0	2.0
Method used to Determine Plasticity	**	**	**	**	**	**
Field Wet Density t/m <sup>3</sup>	2.40	2.41	2.39	2.40	2.38	2.41
Field Moisture Content %	8.0	6.7	7.4	7.0	7.2	6.8
Field Dry Density t/m <sup>3</sup>	2.22	2.26	2.22	2.25	2.22	2.26
Maximum Dry Density t/m <sup>3</sup>	2.22	2.24	2.23	2.23	2.22	2.25
Adjusted Maximum Dry Density t/m <sup>3</sup>	**	**	**	**	**	**
Optimum Moisture Content (OMC) %	9.0	8.0	9.0	8.0	9.0	7.0
Adjusted Optimum Moisture Content (OMC) %	**	**	**	**	**	**
Moisture Variation %	1.0	1.0	1.5	1.0	2.0	0.5
Moisture Ratio %	88.5	86.5	81.5	85.0	80.0	94.0
Density Ratio %	<b>100.0</b>	<b>101.0</b>	<b>99.5</b>	<b>100.5</b>	<b>100.0</b>	<b>100.0</b>
Compaction Method	<b>Modified</b>	<b>Modified</b>	<b>Modified</b>	<b>Modified</b>	<b>Modified</b>	<b>Modified</b>

**Moisture Variation Note:**

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

# Material Test Report

**Report Number:** D22938-10  
**Issue Number:** 1  
**Date Issued:** 19/04/2023  
**Client:** Excell Gray Bruni  
 12 Allied Drive, Tullamarine Vic 3043  
**Project Number:** D22938  
**Project Name:** Riverwalk Estate Stage 33 - Road Base  
**Project Location:** Werribee  
**Work Request:** 5795  
**Date Sampled:** 14/04/2023 13:32  
**Dates Tested:** 14/04/2023 - 17/04/2023  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 98% Mod  
**Location:** Riverwalk Estate Stage 33 - Roadbase  
**Material:** 20mm Class 2 Crushed Rock  
**Material Source:** Holcim - Werribee



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Approved Signatory: Eranda Hippola  
 Laboratory Manager

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.2.1 & 5.4.1 & 5.8.1 & 2.1.1						
Sample Number	D23-5795G	D23-5795H	D23-5795I	D23-5795J	D23-5795K	D23-5795L
Date Tested	14/04/2023	14/04/2023	14/04/2023	14/04/2023	14/04/2023	14/04/2023
Time Tested	13:32	13:32	13:32	13:32	13:32	13:32
Test Request #/Location	DISTRICT AVENUE	BONANG ROAD	MOYNE ROAD	TULSI AVENUE	TULSI AVENUE	TULSI AVENUE
Chainage (m)	226.651m	145.384m	140.205m	837.873m	895.747m	955.626m
Location Offset (m)	5m from LEL	4m from LEL	3m from LEL	3m from LEL	3m from LEL	4m from LEL
Elevation (m)	- 60 mm	- 60 mm	- 60 mm	- 80 mm	- 80 mm	- 80 mm
Layer / Reduced Level	Roadbase	Roadbase	Roadbase	Roadbase	Roadbase	Roadbase
Thickness of Layer (mm)	130	130	130	110	110	110
Soil Description	20mm Class 2 Crushed Rock	20mm Class 2 Crushed Rock	20mm Class 2 Crushed Rock	20mm Class 2 Crushed Rock	20mm Class 2 Crushed Rock	20mm Class 2 Crushed Rock
Test Depth (mm)	100	100	100	100	100	100
Fraction Tested (mm)	19.0	19.0	19.0	19.0	19.0	19.0
Oversize (wet basis) %	0	0	0	0	0	0
Oversize (dry basis) %	0	0	0	0	0	0
Curing Hours	2.0	2.0	2.0	2.0	2.0	2.0
Method used to Determine Plasticity	**	**	**	**	**	**
Field Wet Density t/m <sup>3</sup>	2.39	2.39	2.40	2.40	2.38	2.39
Field Moisture Content %	6.6	7.7	7.1	7.5	7.2	7.4
Field Dry Density t/m <sup>3</sup>	2.24	2.22	2.24	2.24	2.22	2.23
Maximum Dry Density t/m <sup>3</sup>	2.16	2.26	2.24	2.22	2.23	2.20
Adjusted Maximum Dry Density t/m <sup>3</sup>	**	**	**	**	**	**
Optimum Moisture Content (OMC) %	8.5	8.5	8.5	7.5	8.0	9.0
Adjusted Optimum Moisture Content (OMC) %	**	**	**	**	**	**
Moisture Variation %	1.5	1.0	1.5	0.0	0.5	2.0
Moisture Ratio %	80.0	90.0	84.0	98.5	92.5	80.5
Density Ratio %	<b>103.5</b>	<b>98.5</b>	<b>100.0</b>	<b>101.0</b>	<b>99.5</b>	<b>101.0</b>
Compaction Method	<b>Modified</b>	<b>Modified</b>	<b>Modified</b>	<b>Modified</b>	<b>Modified</b>	<b>Modified</b>

**Moisture Variation Note:**

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

# Material Test Report

**Report Number:** D22938-10  
**Issue Number:** 1  
**Date Issued:** 19/04/2023  
**Client:** Excell Gray Bruni  
 12 Allied Drive, Tullamarine Vic 3043  
**Project Number:** D22938  
**Project Name:** Riverwalk Estate Stage 33 - Road Base  
**Project Location:** Werribee  
**Work Request:** 5795  
**Date Sampled:** 14/04/2023 13:32  
**Dates Tested:** 14/04/2023 - 18/04/2023  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 98% Mod  
**Location:** Riverwalk Estate Stage 33 - Roadbase  
**Material:** 20mm Class 2 Crushed Rock  
**Material Source:** Holcim - Werribee



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 Laboratory Manager

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.2.1 & 5.4.1 & 5.8.1 & 2.1.1					
Sample Number	D23-5795M				
Date Tested	14/04/2023				
Time Tested	13:32				
Test Request #/Location	TULSI AVENUE				
Chainage (m)	1008.097m				
Location Offset (m)	2m from LEL				
Elevation (m)	- 80 mm				
Layer / Reduced Level	Roadbase				
Thickness of Layer (mm)	110				
Soil Description	20mm Class 2 Crushed Rock				
Test Depth (mm)	100				
Fraction Tested (mm)	19.0				
Oversize (wet basis) %	0				
Oversize (dry basis) %	0				
Curing Hours	2.0				
Method used to Determine Plasticity	**				
Field Wet Density t/m <sup>3</sup>	2.39				
Field Moisture Content %	7.7				
Field Dry Density t/m <sup>3</sup>	2.22				
Maximum Dry Density t/m <sup>3</sup>	2.22				
Adjusted Maximum Dry Density t/m <sup>3</sup>	**				
Optimum Moisture Content (OMC) %	9.0				
Adjusted Optimum Moisture Content (OMC) %	**				
Moisture Variation %	1.5				
Moisture Ratio %	86.0				
Density Ratio %	<b>100.0</b>				
Compaction Method	<b>Modified</b>				

**Moisture Variation Note:**

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