

# Bridgewater Estate Stage 12

## GITA Inspection Verification Report

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**Prepared For:** Lojac Civil Pty Ltd

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**Report Number** D21556A V1

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**Version Release Date** 14 Feb 2022

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**Report Released By** C Caulfield

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**Title** Project Manager

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**Signature**



**Table of Contents**

1 Introduction ..... 3

2 Scope of Work ..... 3

    2.1 Area of Work ..... 3

    2.2 Specification ..... 3

    2.3 Limitations ..... 4

3 Construction Method ..... 5

    3.1 Subgrade Preparation ..... 5

    3.2 Fill Placement ..... 5

4 Construction Verification ..... 5

5 Statement of Compliance ..... 6

**Appendices**

- Appendix 1 Test Location Plan
- Appendix 2 Compaction Test Register and Test Certificates

## 1 Introduction

*Terra Firma Laboratories* was engaged by Lojac Civil Pty Ltd as the Geotechnical Inspection and Testing Authority (GITA) to provide Level 1 supervision and testing works on the earthworks component for Bridgewater Estate Stage 12. This work was conducted over the period of 30/03/2021 to 19/05/2021.

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 1207 through to 1231, 1233 through to 1248, 1252 through to 1268 and 1270 through to 1287, bounded by streets Fuchsia Drive, Bark Terrace, Trellis Grove, Honeyeater Way and Clay Crescent. 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 Reeds Consulting (Drawing Reference: 22236E/12) and provided by Lojac Civil 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 Lojac Civil 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 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 300mm 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 (D21556D1, 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 74 density tests (Hilf method in accordance with 1289 5.7.1) were undertaken with 0 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 12 at Bridgewater Estate. For completed fill areas of greater than 300mm, and for works completed between 30/03/2021 and 19/05/2021, 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 12 of Bridgewater Estate was observed to be constructed in compliance with the requirements of the Technical Specification.

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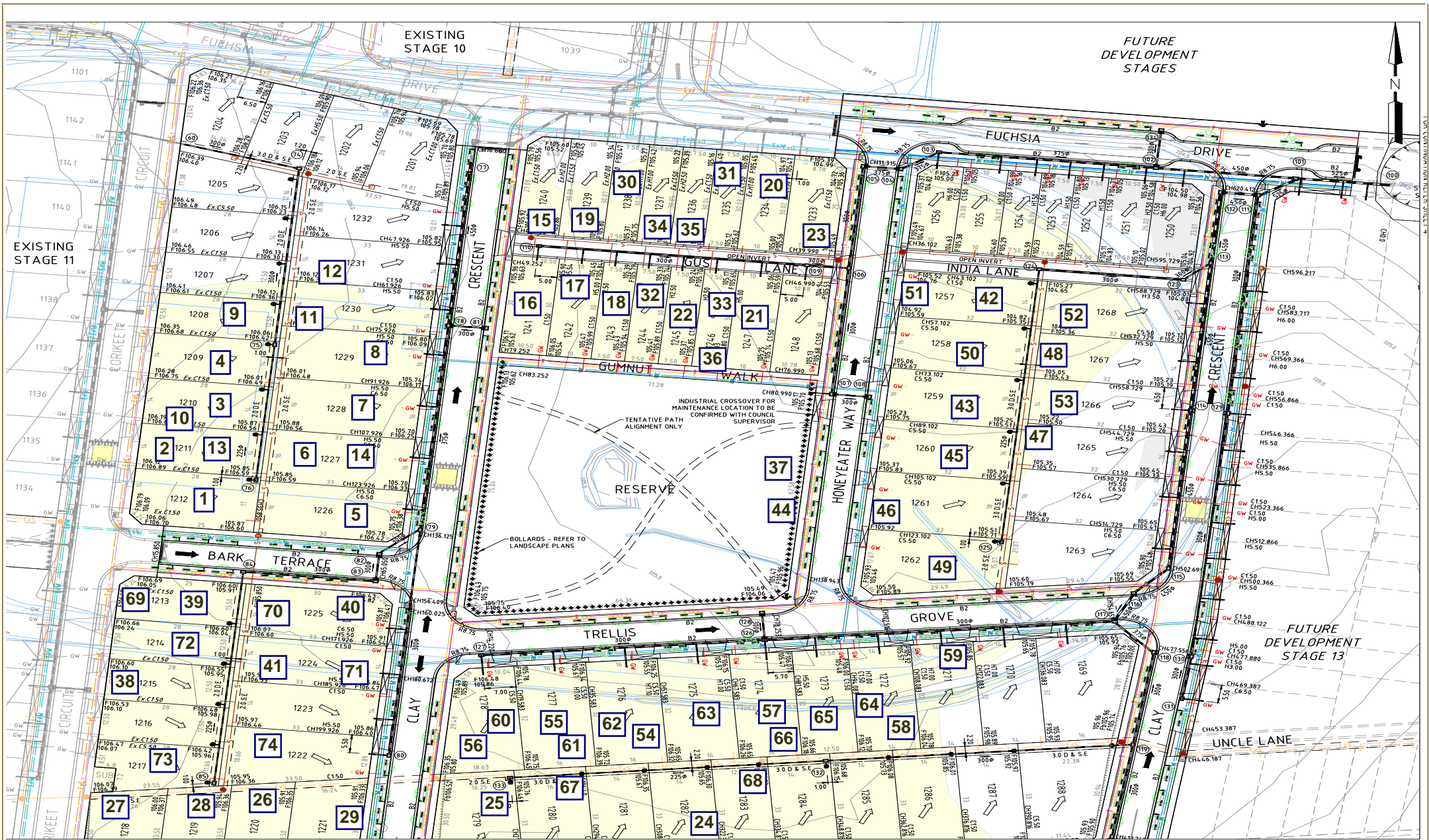
Your Worksite is Our Laboratory.

## Appendix 1: Test Location Plan

Our Head Office  
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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Page 1 of 2



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

### Test Location Plan

not to scale

Client: Lojac Civil Pty Ltd

Project: Bridgewater Estate, Stage 12

Reference: D21556 D1





**Your Worksite is Our Laboratory.**

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



## Compaction Test Register

**Client:** Lojac Civil Pty Ltd      **Project No:** D21556  
**Project:** Bridgewater Estate Stage 12      **Specification:** 95%

Date:	Test No:	Layer:	Retest of:	Density:	Pass/Fail:	Lot No:	Report No:
30/03/2021	1	Layer 3		98.5%	Pass	Lot 1212	D21556-1
30/03/2021	2	Layer 2		99.0%	Pass	Lot 1211	D21556-1
30/03/2021	3	Layer 2		97.5%	Pass	Lot 1210	D21556-1
30/03/2021	4	Layer 2		97.5%	Pass	Lot 1209	D21556-1
30/03/2021	5	Layer 3		99.5%	Pass	Lot 1226	D21556-1
30/03/2021	6	Layer 2		98.0%	Pass	Lot 1227	D21556-1
30/03/2021	7	Layer 2		96.0%	Pass	Lot 1228	D21556-1
30/03/2021	8	Layer 2		99.5%	Pass	Lot 1229	D21556-1
31/03/2021	9	Layer 2		99.0%	Pass	Lot 1208	D21556-2
31/03/2021	10	Layer 2		98.5%	Pass	Lot 1210	D21556-2
31/03/2021	11	Layer 2		99.0%	Pass	Lot 1230	D21556-2
31/03/2021	12	Layer 2		98.0%	Pass	Lot 1231	D21556-2
1/04/2021	13	Layer 3		103.0%	Pass	Lot 1211	D21556-3
1/04/2021	14	Layer 3		97.5%	Pass	Lot 1227	D21556-3
6/04/2021	15	Layer 1		103.0%	Pass	Lot 1240	D21556-4
6/04/2021	16	Layer 1		104.5%	Pass	Lot 1241	D21556-4
6/04/2021	17	Layer 1		104.0%	Pass	Lot 1242	D21556-4
7/04/2021	18	Layer 1		99.5%	Pass	Lot 1243	D21556-5
7/04/2021	19	Layer 1		96.5%	Pass	Lot 1239	D21556-5
7/04/2021	20	Layer 1		101.5%	Pass	Lot 1234	D21556-5
7/04/2021	21	Layer 1		101.5%	Pass	Lot 1247	D21556-5
7/04/2021	22	Layer 1		99.5%	Pass	Lot 1245	D21556-5
7/04/2021	23	Layer 1		103.0%	Pass	Lot 1233	D21556-5
7/04/2021	24	Layer 1		105.5%	Pass	Lot 1282	D21556-5
7/04/2021	25	Layer 1		103.0%	Pass	Lot 1279	D21556-5
7/04/2021	26	Layer 1		99.0%	Pass	Lot 1220	D21556-5
7/04/2021	27	Layer 1		102.5%	Pass	Lot 1218	D21556-5
8/04/2021	28	Layer 1		101.0%	Pass	Lot 1219	D21556-6
8/04/2021	29	Layer 1		102.5%	Pass	Lot 1217	D21556-6
8/04/2021	30	Layer 1		101.5%	Pass	Lot 1238	D21556-6
8/04/2021	31	Layer 1		100.5%	Pass	Lot 1235	D21556-6
8/04/2021	32	Layer 1		101.0%	Pass	Lot 1244	D21556-6
8/04/2021	33	Layer 1		102.0%	Pass	Lot 1246	D21556-6
9/04/2021	34	Layer 1		100.5%	Pass	Lot 1237	D21556-7
9/04/2021	35	Layer 1		99.0%	Pass	Lot 1236	D21556-7
9/04/2021	36	Layer 2		99.0%	Pass	Lot 1246	D21556-7
9/04/2021	37	Layer 2		102.0%	Pass	Reserve	D21556-7
12/04/2021	38	Layer 1		101.5%	Pass	Lot 1215	D21556-8
12/04/2021	39	Layer 1		100.5%	Pass	Lot 1213	D21556-8
12/04/2021	40	Layer 1		101.0%	Pass	Lot 1225	D21556-8
12/04/2021	41	Layer 1		99.0%	Pass	Lot 1224	D21556-8



## Compaction Test Register

**Client:** Lojac Civil Pty Ltd                      **Project No:** D21556  
**Project:** Bridgewater Estate Stage 12            **Specification:** 95%

Date:	Test No:	Layer:	Retest of:	Density:	Pass/Fail:	Lot No:	Report No:
13/04/2021	42	Layer 1		103.0%	Pass	Lot 1257	D21556-9
13/04/2021	43	Layer 1		101.0%	Pass	Lot 1259	D21556-9
13/04/2021	44	Layer 1		105.5%	Pass	Reserve	D21556-9
16/04/2021	45	Layer 1		104.0%	Pass	Lot 1260	D21556-10
16/04/2021	46	Layer 1		103.0%	Pass	Lot 1261	D21556-10
19/04/2021	47	Layer 1		103.0%	Pass	Lot 1265	D21556-11
19/04/2021	48	Layer 1		100.5%	Pass	Lot 1267	D21556-11
19/04/2021	49	Layer 1		102.5%	Pass	Lot 1262	D21556-11
21/04/2021	50	Layer 2		103.5%	Pass	Lot 1258	D21556-12
21/04/2021	51	Layer 2		103.0%	Pass	Lot 1257	D21556-12
21/04/2021	52	Layer 1		101.5%	Pass	Lot 1268	D21556-12
21/04/2021	53	Layer 1		104.0%	Pass	Lot 1266	D21556-12
23/04/2021	54	Layer 1		104.5%	Pass	Lot 1276	D21556-17
23/04/2021	55	Layer 1		98.5%	Pass	Lot 1277	D21556-17
23/04/2021	56	Layer 1		104.5%	Pass	Lot 1278	D21556-17
27/04/2021	57	Layer 1		98.5%	Pass	Lot 1274	D21556-16
27/04/2021	58	Layer 1		106.5%	Pass	Lot 1272	D21556-16
27/04/2021	59	Layer 1		105.0%	Pass	Lot 1271	D21556-16
28/04/2021	60	Layer 2		99.5%	Pass	Lot 1278	D21556-13
28/04/2021	61	Layer 2		96.0%	Pass	Lot 1277	D21556-13
29/04/2021	62	Layer 2		103.5%	Pass	Lot 1276	D21556-14
29/04/2021	63	Layer 2		99.5%	Pass	Lot 1275	D21556-14
30/04/2021	64	Layer 2		99.0%	Pass	Lot 1272	D21-556-15
30/04/2021	65	Layer 2		99.0%	Pass	Lot 1273	D21-556-15
30/04/2021	66	Layer 2		100.0%	Pass	Lot 1274	D21556-15
10/05/2021	67	Layer 1		103.5%	Pass	Lot 1280	D21556-18
10/05/2021	68	Layer 1		102.0%	Pass	Lot 1283	D21556-18
14/05/2021	69	Layer 2		104.0%	Pass	Lot 1213	D21556-19
14/05/2021	70	Layer 2		101.0%	Pass	Lot 1225	D21556-19
18/05/2021	71	Layer 2		106.5%	Pass	Lot 1224	D21556-20
18/05/2021	72	Layer 2		101.0%	Pass	Lot 1214	D21556-20
19/05/2021	73	Layer 2		99.0%	Pass	Lot 1217	D21556-21
19/05/2021	74	Layer 2		100.0%	Pass	Lot 1222	D21556-21

# Material Test Report


**Report Number:** D21556-1  
**Issue Number:** 1  
**Date Issued:** 01/04/2021  
**Client:** Lojac Civil Pty Ltd  
 35/148 Chesterville Road, Moorabbin Vic 3189  
**Project Number:** D21556  
**Project Name:** Bridgwater Estate Stage 12  
**Project Location:** Level one  
**Work Request:** 2914  
**Date Sampled:** 30/03/2021 14:00  
**Dates Tested:** 30/03/2021 - 31/03/2021  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% STD  
**Location:** Bridgwater Estate Stage 12 - Level one  
**Material:** clay  
**Material Source:** on site



Deer Park Laboratory  
 Factory 1 80-82 Rebecca Drive Ravenhall VIC 3023  
 Phone: 0435 751 756  
 Email: ehippola@terrafirmalabs.com.au



Accredited for compliance with ISO/IEC 17025 - Testing

  
 Approved Signatory: Eranda Hippola  
 Snr lab Tech

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1				
Sample Number	D21-2914A	D21-2914B	D21-2914C	D21-2914D
Test Number	1	2	3	4
Date Tested	30/03/2021	30/03/2021	30/03/2021	30/03/2021
Time Tested	15:20	15:20	15:20	15:20
Test Request #/Location	1 LOT 1212	2 LOT 1211	3 LOT 1210	4 LOT 1209
Layer / Reduced Level	Layer 3	Layer 2	Layer 2	Layer 2
Thickness of Layer (mm)	300	300	300	300
Soil Description	Clay	Clay	Clay	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)	0	0	0	0
Field Wet Density (FWD) t/m <sup>3</sup>	1.97	1.91	1.90	1.93
Field Moisture Content %	25.8	26.4	25.4	25.8
Field Dry Density (FDD) t/m <sup>3</sup>	1.56	1.51	1.52	1.53
Peak Converted Wet Density t/m <sup>3</sup>	1.99	1.93	1.95	1.98
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	**	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	27.7	28.0	27.9	28.2
Adj. Field Moisture Content % (AS1289.5.4.1)	25.8	26.4	25.4	25.8
Moisture Ratio % (AS1289.5.4.1)	93.0	94.5	91.0	91.5
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**	**
Moisture Variation (Wv) %	2.0	1.5	2.5	2.0
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	<b>98.5</b>	<b>99.0</b>	<b>97.5</b>	<b>97.5</b>
Compaction Method	<b>Standard</b>	<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:** D21556-1  
**Issue Number:** 1  
**Date Issued:** 01/04/2021  
**Client:** Lojac Civil Pty Ltd  
 35/148 Chesterville Road, Moorabbin Vic 3189  
**Project Number:** D21556  
**Project Name:** Bridgwater Estate Stage 12  
**Project Location:** Level one  
**Work Request:** 2914  
**Date Sampled:** 30/03/2021 14:00  
**Dates Tested:** 30/03/2021 - 31/03/2021  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% STD  
**Location:** Bridgwater Estate Stage 12 - Level one  
**Material:** clay  
**Material Source:** on site



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 Approved Signatory: Eranda Hippola  
 Snr lab Tech

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1				
Sample Number	D21-2914E	D21-2914F	D21-2914G	D21-2914H
Test Number	5	6	7	8
Date Tested	30/03/2021	30/03/2021	30/03/2021	30/03/2021
Time Tested	15:20	15:20	15:20	15:20
Test Request #/Location	5 LOT 1226	6 LOT 1227	7 LOT 1228	8 LOT 1229
Layer / Reduced Level	Layer 3	Layer 2	Layer 2	Layer 2
Thickness of Layer (mm)	300	300	300	300
Soil Description	Clay	Clay	Clay	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)	0	0	0	0
Field Wet Density (FWD) t/m <sup>3</sup>	1.95	1.88	1.93	1.96
Field Moisture Content %	24.6	25.3	21.7	18.3
Field Dry Density (FDD) t/m <sup>3</sup>	1.56	1.50	1.59	1.66
Peak Converted Wet Density t/m <sup>3</sup>	1.96	1.92	2.02	1.97
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	**	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	26.7	27.4	23.7	20.3
Adj. Field Moisture Content % (AS1289.5.4.1)	24.6	25.3	21.7	18.3
Moisture Ratio % (AS1289.5.4.1)	92.0	92.5	91.5	90.0
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**	**
Moisture Variation (Wv) %	2.0	2.0	2.0	2.0
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	<b>99.5</b>	<b>98.0</b>	<b>96.0</b>	<b>99.5</b>
Compaction Method	<b>Standard</b>	<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:** D21556-2  
**Issue Number:** 1  
**Date Issued:** 07/04/2021  
**Client:** Lojac Civil Pty Ltd  
 35/148 Chesterville Road, Moorabbin Vic 3189  
**Project Number:** D21556  
**Project Name:** Bridgwater Estate Stage 12  
**Project Location:** Level one  
**Work Request:** 2924  
**Date Sampled:** 31/03/2021  
**Dates Tested:** 31/03/2021 - 01/04/2021  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% STD  
**Location:** Bridgwater Estate Stage 12 - Level one  
**Material:** Clay  
**Material Source:** On site



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 Phone: 0435 751 756  
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 Approved Signatory: Eranda Hippola  
 Snr lab Tech

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1				
Sample Number	D21-2924A	D21-2924B	D21-2924C	D21-2924D
Test Number	9	10	11	12
Date Tested	31/03/2021	31/03/2021	31/03/2021	31/03/2021
Time Tested	14:57	14:57	14:57	14:57
Test Request #/Location	9 1208	10 1207	11 1230	12 1231
Layer / Reduced Level	Layer 2	Layer 2	Layer 2	Layer 2
Thickness of Layer (mm)	300	300	300	300
Soil Description	Clay	Clay	Clay	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)	0	0	0	0
Field Wet Density (FWD) t/m <sup>3</sup>	1.93	1.90	1.88	1.87
Field Moisture Content %	22.0	24.2	23.7	17.0
Field Dry Density (FDD) t/m <sup>3</sup>	1.58	1.53	1.52	1.60
Peak Converted Wet Density t/m <sup>3</sup>	1.95	1.94	1.90	1.91
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	**	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	24.4	26.7	26.1	19.7
Adj. Field Moisture Content % (AS1289.5.4.1)	22.0	24.2	23.7	17.0
Moisture Ratio % (AS1289.5.4.1)	90.0	90.5	91.0	86.5
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**	**
Moisture Variation (Wv) %	2.0	2.5	2.5	2.5
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	<b>99.0</b>	<b>98.5</b>	<b>99.0</b>	<b>98.0</b>
Compaction Method	<b>Standard</b>	<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:** D21556-3  
**Issue Number:** 1  
**Date Issued:** 07/04/2021  
**Client:** Lojac Civil Pty Ltd  
 35/148 Chesterville Road, Moorabbin Vic 3189  
**Project Number:** D21556  
**Project Name:** Bridgewater Estate Stage 12  
**Project Location:** Level one  
**Work Request:** 2934  
**Date Sampled:** 01/04/2021  
**Dates Tested:** 01/04/2021 - 07/04/2021  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% STD  
**Location:** Bridgewater Estate Stage 12 - Level one  
**Material:** clay  
**Material Source:** on site



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 Approved Signatory: Eranda Hippola  
 Snr lab Tech

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D21-2934A	D21-2934B	
Test Number	13	14	
Date Tested	01/04/2021	01/04/2021	
Time Tested	13:44	13:44	
Test Request #/Location	LOT 1211	LOT 1227	
Layer / Reduced Level	Layer 3	Layer 3	
Thickness of Layer (mm)	300	300	
Soil Description	Clay	Clay	
Test Depth (mm)	275	275	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	8	6	
Percentage of Dry Oversize (%) (AS1289.5.4.1)	**	**	
Field Wet Density (FWD) t/m <sup>3</sup>	1.87	1.94	
Field Moisture Content %	17.1	18.4	
Field Dry Density (FDD) t/m <sup>3</sup>	1.62	1.66	
Peak Converted Wet Density t/m <sup>3</sup>	**	**	
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	1.81	1.99	
Adj. Optimum Moisture Content % (AS1289.5.4.1)	20.2	19.4	
Adj. Field Moisture Content % (AS1289.5.4.1)	15.7	17.4	
Moisture Ratio % (AS1289.5.4.1)	**	**	
Adjusted Moisture Ratio % (AS1289.5.4.1)	77.5	89.5	
Moisture Variation (Wv) %	**	**	
Adjusted Moisture Variation %	4.5	2.0	
Hilf Density Ratio (%)	<b>103.0</b>	<b>97.5</b>	
Compaction Method	<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:** D21556-4  
**Issue Number:** 1  
**Date Issued:** 08/04/2021  
**Client:** Lojac Civil Pty Ltd  
 35/148 Chesterville Road, Moorabbin Vic 3189  
**Project Number:** D21556  
**Project Name:** Bridgwater Estate Stage 12  
**Project Location:** Level one  
**Work Request:** 2946  
**Date Sampled:** 06/04/2021 14:30  
**Dates Tested:** 06/04/2021 - 08/04/2021  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% STD  
**Location:** Bridgwater Estate Stage 12 - Level one  
**Material:** Clay  
**Material Source:** On Site



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 Snr lab Tech

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D21-2946A	D21-2946B	D21-2946C
Test Number	15	16	17
Date Tested	06/04/2021	06/04/2021	06/04/2021
Time Tested	14:30	14:30	14:30
Test Request #/Location	LOT 1240	LOT 1241	LOT 1242
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	5	0
Percentage of Dry Oversize (%) (AS1289.5.4.1)	0	**	0
Field Wet Density (FWD) t/m <sup>3</sup>	1.93	1.96	1.94
Field Moisture Content %	19.8	19.8	19.2
Field Dry Density (FDD) t/m <sup>3</sup>	1.61	1.65	1.63
Peak Converted Wet Density t/m <sup>3</sup>	1.88	**	1.87
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	**	1.88	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	21.8	21.1	21.9
Adj. Field Moisture Content % (AS1289.5.4.1)	19.8	18.8	19.2
Moisture Ratio % (AS1289.5.4.1)	91.0	**	87.5
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	89.0	**
Moisture Variation (Wv) %	2.0	**	2.5
Adjusted Moisture Variation %	**	2.5	**
Hilf Density Ratio (%)	<b>103.0</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:** D21556-5  
**Issue Number:** 1  
**Date Issued:** 13/04/2021  
**Client:** Lojac Civil Pty Ltd  
 35/148 Chesterville Road, Moorabbin Vic 3189  
**Project Number:** D21556  
**Project Name:** Bridgwater Estate Stage 12  
**Project Location:** Level one  
**Work Request:** 2951  
**Date Sampled:** 07/04/2021  
**Dates Tested:** 07/04/2021 - 12/04/2021  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% STD  
**Location:** Bridgwater Estate Stage 12 - Level one  
**Material:** Silty Clay  
**Material Source:** On site



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 Approved Signatory: Eranda Hippola  
 Snr lab Tech

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1					
Sample Number	D21-2951A	D21-2951B	D21-2951C	D21-2951D	D21-2951E
Test Number	18	19	20	21	22
Date Tested	07/04/2021	07/04/2021	07/04/2021	07/04/2021	07/04/2021
Time Tested	16:01	16:01	16:01	16:01	16:01
Test Request #/Location	LOT 1243	LOT 1239	LOT 1234	LOT 1247	LOT 1245
Chainage (m)	**	**	**	**	**
Location Offset (m)	**	**	**	**	**
Layer / Reduced Level	Layer 1	Layer 1	Layer 1	Layer 1	Layer 1
Thickness of Layer (mm)	300	300	300	300	300
Soil Description	Clay	Clay	Clay	Clay	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)	0	0	0	0	0
Field Wet Density (FWD) t/m <sup>3</sup>	1.92	1.83	1.91	1.91	1.91
Field Moisture Content %	17.4	18.3	17.5	17.7	17.5
Field Dry Density (FDD) t/m <sup>3</sup>	1.64	1.55	1.62	1.62	1.62
Peak Converted Wet Density t/m <sup>3</sup>	1.93	1.90	1.88	1.89	1.92
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	**	**	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	19.6	20.8	19.7	20.0	20.0
Adj. Field Moisture Content % (AS1289.5.4.1)	17.4	18.3	17.5	17.7	17.5
Moisture Ratio % (AS1289.5.4.1)	89.0	88.0	89.0	88.5	87.5
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**	**	**
Moisture Variation (Wv) %	2.0	2.5	2.0	2.5	2.5
Adjusted Moisture Variation %	**	**	**	**	**
Hilf Density Ratio (%)	99.5	96.5	101.5	101.5	99.5
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:** D21556-5  
**Issue Number:** 1  
**Date Issued:** 13/04/2021  
**Client:** Lojac Civil Pty Ltd  
 35/148 Chesterville Road, Moorabbin Vic 3189  
**Project Number:** D21556  
**Project Name:** Bridgwater Estate Stage 12  
**Project Location:** Level one  
**Work Request:** 2951  
**Date Sampled:** 07/04/2021  
**Dates Tested:** 07/04/2021 - 12/04/2021  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% STD  
**Location:** Bridgwater Estate Stage 12 - Level one  
**Material:** Silty Clay  
**Material Source:** On site



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 Snr lab Tech

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Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1					
Sample Number	D21-2951F	D21-2951G	D21-2951H	D21-2951I	D21-2951J
Test Number	23	24	25	26	27
Date Tested	07/04/2021	07/04/2021	07/04/2021	07/04/2021	07/04/2021
Time Tested	16:01	16:01	16:01	16:01	16:01
Test Request #/Location	LOT 1233	LOT 1282	LOT 1279	LOT 1220	LOT 1218
Chainage (m)	**	**	**	**	**
Location Offset (m)	**	**	**	**	**
Layer / Reduced Level	Layer 1	Layer 1	Layer 1	Layer 1	Layer 1
Thickness of Layer (mm)	300	300	300	300	300
Soil Description	Clay	Clay	Clay	Clay	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)	0	0	0	0	0
Field Wet Density (FWD) t/m <sup>3</sup>	1.96	1.97	1.92	1.86	1.93
Field Moisture Content %	17.6	17.6	17.6	17.6	18.3
Field Dry Density (FDD) t/m <sup>3</sup>	1.66	1.68	1.63	1.58	1.63
Peak Converted Wet Density t/m <sup>3</sup>	1.90	1.88	1.87	1.87	1.88
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	**	**	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	20.2	19.6	19.8	19.5	20.2
Adj. Field Moisture Content % (AS1289.5.4.1)	17.6	17.6	17.6	17.6	18.3
Moisture Ratio % (AS1289.5.4.1)	87.0	90.0	89.0	90.5	90.5
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**	**	**
Moisture Variation (Wv) %	2.5	2.0	2.5	2.0	2.0
Adjusted Moisture Variation %	**	**	**	**	**
Hilf Density Ratio (%)	103.0	105.5	103.0	99.0	102.5
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:** D21556-6  
**Issue Number:** 1  
**Date Issued:** 13/04/2021  
**Client:** Lojac Civil Pty Ltd  
 35/148 Chesterville Road, Moorabbin Vic 3189  
**Project Number:** D21556  
**Project Name:** Bridgwater Estate Stage 12  
**Project Location:** Level one  
**Work Request:** 2960  
**Date Sampled:** 08/04/2021  
**Dates Tested:** 08/04/2021 - 12/04/2021  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% STD  
**Location:** Bridgwater Estate Stage 12 - Level one  
**Material:** Silty Clay  
**Material Source:** On site



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NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1						
Sample Number	D21-2960A	D21-2960B	D21-2960C	D21-2960D	D21-2960E	D21-2960F
Test Number	28	29	30	31	32	33
Date Tested	08/04/2021	08/04/2021	08/04/2021	08/04/2021	08/04/2021	08/04/2021
Time Tested	16:15	16:15	16:15	16:15	16:15	16:15
Test Request #/Location	Lot 1219	Lot 1217	Lot 1238	Lot 1235	Lot 1244	Lot 1246
Layer / Reduced Level	Layer 1	Layer 1	Layer 1	Layer 1	Layer 1	Layer 1
Thickness of Layer (mm)	300	300	300	300	300	300
Soil Description	Silty Clay	Silty Clay	Silty Clay	Silty Clay	Silty Clay	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
Field Wet Density (FWD) t/m <sup>3</sup>	1.89	1.93	1.93	1.92	1.95	1.93
Field Moisture Content %	17.8	18.6	20.5	17.6	17.6	18.1
Field Dry Density (FDD) t/m <sup>3</sup>	1.61	1.63	1.60	1.64	1.66	1.63
Peak Converted Wet Density t/m <sup>3</sup>	1.88	1.89	1.90	1.91	1.94	1.89
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	**	**	**	**	**	**
Moisture Variation (Wv) %	4.5	4.0	3.0	2.5	2.0	2.5
Adjusted Moisture Variation %	**	**	**	**	**	**
Hilf Density Ratio (%)	<b>101.0</b>	<b>102.5</b>	<b>101.5</b>	<b>100.5</b>	<b>101.0</b>	<b>102.0</b>
Compaction Method	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<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:** D21556-7  
**Issue Number:** 1  
**Date Issued:** 13/04/2021  
**Client:** Lojac Civil Pty Ltd  
 35/148 Chesterville Road, Moorabbin Vic 3189  
**Project Number:** D21556  
**Project Name:** Bridgwater Estate Stage 12  
**Project Location:** Level one  
**Work Request:** 2965  
**Dates Tested:** 09/04/2021 - 12/04/2021  
**Location:** Bridgwater Estate Stage 12 - Level one



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 Snr lab Tech

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1				
Sample Number	D21-2965A	D21-2965B	D21-2965C	D21-2965D
Test Number	34	35	36	37
Date Tested	09/04/2021	09/04/2021	09/04/2021	09/04/2021
Time Tested	15:43	15:43	15:43	15:43
Test Request #/Location	Lot1237	Lot1236	Lot1246	E293869 N5820151
Layer / Reduced Level	Layer 1	Layer 1	Layer 2	Layer 2
Thickness of Layer (mm)	300	300	300	300
Soil Description	Silty Clay	Silty Clay	Silty Clay	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
Field Wet Density (FWD) t/m <sup>3</sup>	1.92	1.93	1.92	1.99
Field Moisture Content %	21.6	20.4	21.6	20.6
Field Dry Density (FDD) t/m <sup>3</sup>	1.58	1.60	1.58	1.65
Peak Converted Wet Density t/m <sup>3</sup>	1.91	1.95	1.94	1.95
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	**	**	**	**
Moisture Variation (Wv) %	3.0	3.0	1.5	2.5
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	<b>100.5</b>	<b>99.0</b>	<b>99.0</b>	<b>102.0</b>
Compaction Method	<b>Standard</b>	<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:** D21556-8  
**Issue Number:** 1  
**Date Issued:** 14/04/2021  
**Client:** Lojac Civil Pty Ltd  
 35/148 Chesterville Road, Moorabbin Vic 3189  
**Project Number:** D21556  
**Project Name:** Bridgewater Estate Stage 12  
**Project Location:** Level one  
**Work Request:** 2977  
**Dates Tested:** 12/04/2021 - 13/04/2021  
**Location:** Bridgewater Estate Stage 12



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 Snr lab Tech

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1				
Sample Number	D21-2977A	D21-2977B	D21-2977C	D21-2977D
Test Number	38	39	40	41
Date Tested	12/04/2021	12/04/2021	12/04/2021	12/04/2021
Time Tested	16:10	16:10	16:10	16:10
Test Request #/Location	Lot 1215	Lot 1213	Lot 1225	Lot 1224
Layer / Reduced Level	Layer 1	Layer 1	Layer 1	Layer 1
Thickness of Layer (mm)	300	300	300	300
Soil Description	Silty Clay	Silty Clay	Silty Clay	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
Field Wet Density (FWD) t/m <sup>3</sup>	1.91	1.88	1.88	1.85
Field Moisture Content %	26.6	25.9	25.6	26.2
Field Dry Density (FDD) t/m <sup>3</sup>	1.51	1.50	1.50	1.46
Peak Converted Wet Density t/m <sup>3</sup>	1.89	1.88	1.86	1.86
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	**	**	**	**
Moisture Variation (Wv) %	2.5	2.5	2.0	2.0
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	<b>101.5</b>	<b>100.5</b>	<b>101.0</b>	<b>99.0</b>
Compaction Method	<b>Standard</b>	<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:** D21556-9  
**Issue Number:** 1  
**Date Issued:** 16/04/2021  
**Client:** Lojac Civil Pty Ltd  
 35/148 Chesterville Road, Moorabbin Vic 3189  
**Project Number:** D21556  
**Project Name:** Bridgwater Estate Stage 12  
**Project Location:** Level one  
**Work Request:** 2981  
**Dates Tested:** 13/04/2021 - 15/04/2021  
**Location:** Bridge water Estate Stage 12 - Level one



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NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D21-2981A	D21-2981B	D21-2981C
Test Number	42	43	44
Date Tested	13/04/2021	13/04/2021	13/04/2021
Time Tested	15:00	15:00	15:00
Test Request #/Location	Lot 1257	Lot 1259	E 293875
Elevation (m)	**	**	N 5820159
Layer / Reduced Level	Layer 1	Layer 1	Layer 1
Thickness of Layer (mm)	300	300	300
Soil Description	Silty Clay	Silty Clay	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	0	0
Percentage of Dry Oversize (%) (AS1289.5.4.1)	0	0	0
Field Wet Density (FWD) t/m <sup>3</sup>	1.94	1.89	1.94
Field Moisture Content %	26.1	25.3	18.8
Field Dry Density (FDD) t/m <sup>3</sup>	1.54	1.51	1.63
Peak Converted Wet Density t/m <sup>3</sup>	1.88	1.88	1.84
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	26.5	25.6	19.0
Adj. Field Moisture Content % (AS1289.5.4.1)	26.1	25.3	18.8
Moisture Ratio % (AS1289.5.4.1)	98.5	99.0	99.0
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**
Moisture Variation (Wv) %	0.5	0.5	0.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	<b>103.0</b>	<b>101.0</b>	<b>105.5</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:** D21556-10  
**Issue Number:** 1  
**Date Issued:** 22/04/2021  
**Client:** Lojac Civil Pty Ltd  
 35/148 Chesterville Road, Moorabbin Vic 3189  
**Project Number:** D21556  
**Project Name:** Bridgwater Estate Stage 12  
**Project Location:** Level one  
**Work Request:** 3003  
**Date Sampled:** 09/04/2021 14:30  
**Dates Tested:** 16/04/2021 - 21/04/2021  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% STD  
**Location:** Bridge water Estate Stage 12 - Level one  
**Material:** Clay  
**Material Source:** On site



Deer Park Laboratory  
 Factory 1 80-82 Rebecca Drive Ravenhall VIC 3023  
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Approved Signatory: Eranda Hippola  
 Snr lab Tech

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D21-3003A	D21-3003B	
Test Number	45	46	
Date Tested	16/04/2021	16/04/2021	
Time Tested	14:34	14:34	
Test Request #/Location	LOT 1260	LOT 1261	
Layer / Reduced Level	Layer 1	Layer 1	
Thickness of Layer (mm)	300	300	
Soil Description	Clay	Clay	
Test Depth (mm)	275	275	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	3	3	
Percentage of Dry Oversize (%) (AS1289.5.4.1)	**	**	
Field Wet Density (FWD) t/m <sup>3</sup>	1.94	1.90	
Field Moisture Content %	7.3	36.9	
Field Dry Density (FDD) t/m <sup>3</sup>	1.82	1.40	
Peak Converted Wet Density t/m <sup>3</sup>	**	**	
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	1.87	1.85	
Adj. Optimum Moisture Content % (AS1289.5.4.1)	12.0	42.1	
Adj. Field Moisture Content % (AS1289.5.4.1)	7.1	35.9	
Moisture Ratio % (AS1289.5.4.1)	**	**	
Adjusted Moisture Ratio % (AS1289.5.4.1)	59.0	85.0	
Moisture Variation (Wv) %	**	**	
Adjusted Moisture Variation %	5.0	5.5	
Hilf Density Ratio (%)	<b>104.0</b>	<b>103.0</b>	
Compaction Method	<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:** D21556-11  
**Issue Number:** 1  
**Date Issued:** 22/04/2021  
**Client:** Lojac Civil Pty Ltd  
 35/148 Chesterville Road, Moorabbin Vic 3189  
**Project Number:** D21556  
**Project Name:** Bridgewater Estate Stage 12  
**Project Location:** Level one  
**Work Request:** 3009  
**Date Sampled:** 19/04/2021 15:00  
**Dates Tested:** 19/04/2021 - 22/04/2021  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% STD  
**Location:** Bridgewater Estate stage 12 - Level one  
**Material:** on site  
**Material Source:** Silty clay



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Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D21-3009A	D21-3009B	D21-3009C
Test Number	47	48	49
Date Tested	19/04/2021	19/04/2021	19/04/2021
Time Tested	15:16	15:16	15:16
Test Request #/Location	Lot 1265	Lot 1267	Lot 1262
Layer / Reduced Level	Layer 1	Layer 1	Layer 1
Thickness of Layer (mm)	300	300	300
Soil Description	Silty Clay	Silty Clay	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	0	0
Field Wet Density (FWD) t/m <sup>3</sup>	1.88	1.96	1.89
Field Moisture Content %	17.1	16.1	16.7
Field Dry Density (FDD) t/m <sup>3</sup>	1.60	1.69	1.62
Peak Converted Wet Density t/m <sup>3</sup>	1.82	1.96	1.84
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	**	**	**
Moisture Variation (Wv) %	5.5	5.0	5.5
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	<b>103.0</b>	<b>100.5</b>	<b>102.5</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:** D21556-12  
**Issue Number:** 1  
**Date Issued:** 23/04/2021  
**Client:** Lojac Civil Pty Ltd  
 35/148 Chesterville Road, Moorabbin Vic 3189  
**Project Number:** D21556  
**Project Name:** Bridgewater Estate Stage 12  
**Project Location:** Level one  
**Work Request:** 3026  
**Date Sampled:** 21/04/2021 14:00  
**Dates Tested:** 21/04/2021 - 23/04/2021  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% STD  
**Location:** Bridgewater Estate Stage 12- Level one  
**Material:** Silty Clay  
**Material Source:** On site



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Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1				
Sample Number	D21-3026A	D21-3026B	D21-3026C	D21-3026D
Test Number	50	51	52	53
Date Tested	21/04/2021	21/04/2021	21/04/2021	21/04/2021
Time Tested	14:59	14:59	14:59	14:59
Test Request #/Location	Lot 1258	Lot 1257	Lot 1268	Lot 1266
Layer / Reduced Level	Layer 2	Layer 2	Layer 1	Layer 1
Thickness of Layer (mm)	300	300	300	300
Soil Description	Silty Clay	Silty Clay	Silty Clay	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
Field Wet Density (FWD) t/m <sup>3</sup>	1.89	1.88	1.84	1.90
Field Moisture Content %	18.4	18.4	17.2	19.0
Field Dry Density (FDD) t/m <sup>3</sup>	1.59	1.59	1.57	1.59
Peak Converted Wet Density t/m <sup>3</sup>	1.82	1.82	1.81	1.83
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	**	**	**	**
Moisture Variation (Wv) %	5.0	5.5	5.0	5.5
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	<b>103.5</b>	<b>103.0</b>	<b>101.5</b>	<b>104.0</b>
Compaction Method	<b>Standard</b>	<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:** D21556-13  
**Issue Number:** 1  
**Date Issued:** 04/05/2021  
**Client:** Lojac Civil Pty Ltd  
 35/148 Chesterville Road, Moorabbin Vic 3189  
**Project Number:** D21556  
**Project Name:** Bridgwater Estate Stage 12  
**Project Location:** Level one  
**Work Request:** 3067  
**Date Sampled:** 28/04/2021 14:30  
**Dates Tested:** 28/04/2021 - 03/05/2021  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% STD  
**Location:** Bridge Water Estate Stage 12  
**Lot Number:** 1277-1278  
**Material:** Silty Clay  
**Material Source:** On site



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Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D21-3067A	D21-3067B	
Test Number	60	61	
Date Tested	28/04/2021	28/04/2021	
Time Tested	14:00	14:30	
Test Request #/Location	Lot 1278	Lot 1277	
Layer / Reduced Level	Layer 2	Layer 2	
Thickness of Layer (mm)	300	300	
Soil Description	Silty Clay	Silty Clay	
Test Depth (mm)	275	278	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	4	4	
Percentage of Dry Oversize (%) (AS1289.5.4.1)	**	**	
Field Wet Density (FWD) t/m <sup>3</sup>	1.98	1.84	
Field Moisture Content %	26.1	23.4	
Field Dry Density (FDD) t/m <sup>3</sup>	1.58	1.50	
Peak Converted Wet Density t/m <sup>3</sup>	**	**	
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	1.99	1.91	
Adj. Optimum Moisture Content % (AS1289.5.4.1)	27.4	25.5	
Adj. Field Moisture Content % (AS1289.5.4.1)	25.2	22.4	
Moisture Ratio % (AS1289.5.4.1)	**	**	
Adjusted Moisture Ratio % (AS1289.5.4.1)	92.0	88.0	
Moisture Variation (Wv) %	**	**	
Adjusted Moisture Variation %	2.0	3.0	
Hilf Density Ratio (%)	<b>99.5</b>	<b>96.0</b>	
Compaction Method	<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:** D21556-14  
**Issue Number:** 1  
**Date Issued:** 04/05/2021  
**Client:** Lojac Civil Pty Ltd  
 35/148 Chesterville Road, Moorabbin Vic 3189  
**Project Number:** D21556  
**Project Name:** Bridgwater Estate Stage 12  
**Project Location:** Level one  
**Work Request:** 3074  
**Date Sampled:** 29/04/2021  
**Dates Tested:** 29/04/2021 - 03/05/2021  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% STD  
**Location:** Bridgwater Estate Stage 12  
**Material:** Clay  
**Material Source:** On site



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NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D21-3074A	D21-3074B	
Test Number	62	63	
Date Tested	29/04/2021	29/04/2021	
Time Tested	14:00	14:00	
Test Request #/Location	LOT 1276	LOT 1275	
Layer / Reduced Level	Layer 2	Layer 2	
Thickness of Layer (mm)	300	300	
Soil Description	Clay	Clay	
Test Depth (mm)	275	275	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	2	0	
Percentage of Dry Oversize (%) (AS1289.5.4.1)	**	0	
Field Wet Density (FWD) t/m <sup>3</sup>	2.04	1.97	
Field Moisture Content %	25.8	25.0	
Field Dry Density (FDD) t/m <sup>3</sup>	1.63	1.57	
Peak Converted Wet Density t/m <sup>3</sup>	**	1.98	
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	1.97	**	
Adj. Optimum Moisture Content % (AS1289.5.4.1)	28.7	28.6	
Adj. Field Moisture Content % (AS1289.5.4.1)	25.2	25.0	
Moisture Ratio % (AS1289.5.4.1)	**	87.5	
Adjusted Moisture Ratio % (AS1289.5.4.1)	87.5	**	
Moisture Variation (Wv) %	**	3.5	
Adjusted Moisture Variation %	3.0	**	
Hilf Density Ratio (%)	<b>103.5</b>	<b>99.5</b>	
Compaction Method	<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:** D21556-15  
**Issue Number:** 1  
**Date Issued:** 04/05/2021  
**Client:** Lojac Civil Pty Ltd  
 35/148 Chesterville Road, Moorabbin Vic 3189  
**Project Number:** D21556  
**Project Name:** Bridgewater Estate Stage 12  
**Project Location:** Level one  
**Work Request:** 3084  
**Date Sampled:** 30/04/2021 15:00  
**Dates Tested:** 30/04/2021 - 03/05/2021  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% STD  
**Location:** Bridgewater Estate Stage 12 - Level one  
**Material:** clay  
**Material Source:** on site



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NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D21-3084A	D21-3084B	D21-3084C
Test Number	64	65	66
Date Tested	30/04/2021	30/04/2021	30/04/2021
Time Tested	15:06	15:06	15:06
Test Request #/Location	Lot 1272	Lot 1273	Lot 1274
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 (%)	2	0	3
Field Wet Density (FWD) t/m <sup>3</sup>	1.96	1.93	1.89
Field Moisture Content %	21.9	26.0	25.6
Field Dry Density (FDD) t/m <sup>3</sup>	1.61	1.53	1.50
Peak Converted Wet Density t/m <sup>3</sup>	**	1.94	**
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	1.97	**	1.88
Moisture Variation (Wv) %	**	3.5	**
Adjusted Moisture Variation %	3.0	**	3.5
Hilf Density Ratio (%)	<b>99.0</b>	<b>99.0</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:** D21556-16  
**Issue Number:** 2 - This version supersedes all previous issues  
**Reissue Reason:** Standard compaction included  
**Date Issued:** 14/02/2022  
**Client:** Lojac Civil Pty Ltd  
 35/148 Chesterville Road, Moorabbin Vic 3189  
**Project Number:** D21556  
**Project Name:** Bridgewater Estate Stage 12 - Level one  
**Project Location:** Level one  
**Work Request:** 3058  
**Date Sampled:** 27/04/2021  
**Dates Tested:** 27/04/2021 - 03/05/2021  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Site Selection:** Selected by Client  
**Location:** Bridgewater Estate Stage 12 - Level one  
**Material:** Clay



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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	D21-3058A	D21-3058C	
Test Number	57	59	
Date Tested	27/04/2021	27/04/2021	
Time Tested	16:13	16:13	
Test Request #/Location	Lot 1274	Lot 1271	
Layer / Reduced Level	Layer 1	Layer 1	
Thickness of Layer (mm)	300	300	
Soil Description	Clay	Clay	
Test Depth (mm)	275	275	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	2	0	
Field Wet Density (FWD) t/m <sup>3</sup>	1.86	1.96	
Field Moisture Content %	23.3	29.6	
Field Dry Density (FDD) t/m <sup>3</sup>	1.51	1.51	
Peak Converted Wet Density t/m <sup>3</sup>	**	1.87	
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	1.88	**	
Moisture Variation (Wv) %	**	-1.0	
Adjusted Moisture Variation %	2.0	**	
Hilf Density Ratio (%)	<b>98.5</b>	<b>105.0</b>	
Compaction Method	<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:** D21556-16  
**Issue Number:** 2 - This version supersedes all previous issues  
**Reissue Reason:** Standard compaction included  
**Date Issued:** 14/02/2022  
**Client:** Lojac Civil Pty Ltd  
 35/148 Chesterville Road, Moorabbin Vic 3189  
**Project Number:** D21556  
**Project Name:** Bridgewater Estate Stage 12 - Level one  
**Project Location:** Level one  
**Work Request:** 3058  
**Date Sampled:** 27/04/2021  
**Dates Tested:** 27/04/2021 - 30/04/2021  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Site Selection:** Selected by Client  
**Location:** Bridgewater Estate Stage 12 - Level one  
**Material:** Clay



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## Compaction Control AS 1289 5.1.1 & 5.4.1 & 5.8.1 & 2.1.1

Sample Number	D21-3058B		
Test Number	58		
Date Tested	27/04/2021		
Time Tested	16:13		
Test Request #/Location	Lot 1272		
Layer / Reduced Level	Layer 1		
Thickness of Layer (mm)	300		
Soil Description	Clay		
Test Depth (mm)	275		
Fraction Tested (mm)	19.0		
Oversize (wet basis) %	3		
Oversize (dry basis) %	4		
Curing Hours	**		
Method used to Determine Plasticity	VISUAL		
Field Wet Density t/m <sup>3</sup>	1.93		
Field Moisture Content %	19.0		
Field Dry Density t/m <sup>3</sup>	1.62		
Maximum Dry Density t/m <sup>3</sup>	**		
Adjusted Maximum Dry Density t/m <sup>3</sup>	1.52		
Optimum Moisture Content (OMC) %	**		
Adjusted Optimum Moisture Content (OMC) %	24.0		
Moisture Variation %	5.0		
Moisture Ratio %	79.5		
Density Ratio %	106.5		
Compaction Method	Standard		

### Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

# Material Test Report


**Report Number:** D21556-17  
**Issue Number:** 1  
**Date Issued:** 05/05/2021  
**Client:** Lojac Civil Pty Ltd  
 35/148 Chesterville Road, Moorabbin Vic 3189  
**Project Number:** D21556  
**Project Name:** Bridgewater Estate Stage 12  
**Project Location:** Level one  
**Work Request:** 3041  
**Dates Tested:** 23/04/2021 - 04/05/2021  
**Location:** Bridgewater estate Stage 12 - Level one



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NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D21-3041A	D21-3041B	D21-3041C
Test Number	54	55	56
Date Tested	23/04/2021	23/04/2021	23/04/2021
Time Tested	11:14	11:14	11:14
Test Request #/Location	Lot 1276	Lot 1277	Lot 1278
Layer / Reduced Level	Layer 1	Layer 1	Layer 1
Thickness of Layer (mm)	300	300	300
Soil Description	Silty Clay	Silty Clay	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	0	0
Field Wet Density (FWD) t/m <sup>3</sup>	1.95	1.90	1.93
Field Moisture Content %	32.1	19.7	20.2
Field Dry Density (FDD) t/m <sup>3</sup>	1.48	1.59	1.61
Peak Converted Wet Density t/m <sup>3</sup>	1.87	1.93	1.85
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	**	**	**
Moisture Variation (Wv) %	-1.5	2.5	4.5
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	<b>104.5</b>	<b>98.5</b>	<b>104.5</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:** D21556-18  
**Issue Number:** 1  
**Date Issued:** 13/05/2021  
**Client:** Lojac Civil Pty Ltd  
 35/148 Chesterville Road, Moorabbin Vic 3189  
**Project Number:** D21556  
**Project Name:** Bridgewater Estate Stage 12  
**Project Location:** Level one  
**Work Request:** 3123  
**Date Sampled:** 10/05/2021  
**Dates Tested:** 10/05/2021 - 12/05/2021  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% STD  
**Location:** Bridgewater Stage 12 - Level One  
**Material:** Clay  
**Material Source:** On site



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Approved Signatory: Eranda Hippola  
 Snr lab Tech

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D21-3123A	D21-3123B	
Test Number	67	68	
Date Tested	10/05/2021	10/05/2021	
Time Tested	15:08	15:08	
Test Request #/Location	Lot 1280	Lot 1283	
Layer / Reduced Level	Layer 1	Layer 1	
Thickness of Layer (mm)	300	300	
Soil Description	Clay	Clay	
Test Depth (mm)	275	275	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	6	6	
Field Wet Density (FWD) t/m <sup>3</sup>	2.01	1.96	
Field Moisture Content %	21.8	20.9	
Field Dry Density (FDD) t/m <sup>3</sup>	1.65	1.62	
Peak Converted Wet Density t/m <sup>3</sup>	**	**	
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	1.94	1.92	
Moisture Variation (Wv) %	**	**	
Adjusted Moisture Variation %	2.5	2.0	
Hilf Density Ratio (%)	<b>103.5</b>	<b>102.0</b>	
Compaction Method	<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:** D21556-19  
**Issue Number:** 1  
**Date Issued:** 19/05/2021  
**Client:** Lojac Civil Pty Ltd  
 35/148 Chesterville Road, Moorabbin Vic 3189  
**Project Number:** D21556  
**Project Name:** Bridgewater Estate Stage 12  
**Project Location:** Level one  
**Work Request:** 3139  
**Date Sampled:** 14/05/2021 14:45  
**Dates Tested:** 14/05/2021 - 19/05/2021  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% STD  
**Location:** Bridgewater Stage 12 - Level one  
**Material:** Gravelly clay  
**Material Source:** on site



Deer Park Laboratory  
 Factory 1 80-82 Rebecca Drive Ravenhall VIC 3023  
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 Approved Signatory: Eranda Hippola  
 Snr lab Tech

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D21-3139A	D21-3139B	
Test Number	69	70	
Date Tested	14/05/2021	14/05/2021	
Time Tested	14:51	14:51	
Test Request #/Location	Lot 1213	Lot 1225	
Layer / Reduced Level	Layer 2	Layer 2	
Thickness of Layer (mm)	300	300	
Soil Description	Clay	Clay	
Test Depth (mm)	275	275	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	6	5	
Field Wet Density (FWD) t/m <sup>3</sup>	2.06	2.00	
Field Moisture Content %	21.2	20.5	
Field Dry Density (FDD) t/m <sup>3</sup>	1.70	1.66	
Peak Converted Wet Density t/m <sup>3</sup>	**	**	
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	1.99	1.98	
Moisture Variation (Wv) %	**	**	
Adjusted Moisture Variation %	5.0	5.0	
Hilf Density Ratio (%)	<b>104.0</b>	<b>101.0</b>	
Compaction Method	<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:** D21556-20  
**Issue Number:** 1  
**Date Issued:** 20/05/2021  
**Client:** Lojac Civil Pty Ltd  
 35/148 Chesterville Road, Moorabbin Vic 3189  
**Project Number:** D21556  
**Project Name:** Bridgewater Estate Stage 12  
**Project Location:** Level one  
**Work Request:** 3151  
**Date Sampled:** 18/05/2021  
**Dates Tested:** 18/05/2021 - 19/05/2021  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% STD  
**Location:** Bridgewater Stage 12 - Level one  
**Material:** Gravelly clay  
**Material Source:** on site



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 Phone: 0435 751 756  
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Approved Signatory: Eranda Hippola  
 Snr lab Tech

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D21-3151A	D21-3151B	
Test Number	71	72	
Date Tested	18/05/2021	18/05/2021	
Time Tested	16:55	16:55	
Test Request #/Location	Lot 1224	Lot 1214	
Layer / Reduced Level	Layer 2	Layer 2	
Thickness of Layer (mm)	300	300	
Soil Description	Gravelly clay	Gravelly clay	
Test Depth (mm)	275	275	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	10	8	
Field Wet Density (FWD) t/m <sup>3</sup>	2.16	2.01	
Field Moisture Content %	19.0	18.7	
Field Dry Density (FDD) t/m <sup>3</sup>	1.81	1.69	
Peak Converted Wet Density t/m <sup>3</sup>	**	**	
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	2.02	2.00	
Moisture Variation (Wv) %	**	**	
Adjusted Moisture Variation %	4.5	5.0	
Hilf Density Ratio (%)	<b>106.5</b>	<b>101.0</b>	
Compaction Method	<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:** D21556-21  
**Issue Number:** 1  
**Date Issued:** 27/05/2021  
**Client:** Lojac Civil Pty Ltd  
 35/148 Chesterville Road, Moorabbin Vic 3189  
**Project Number:** D21556  
**Project Name:** Bridgewater Estate Stage 12  
**Project Location:** Level one  
**Work Request:** 3161  
**Date Sampled:** 19/05/2021  
**Dates Tested:** 19/05/2021 - 26/05/2021  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% STD  
**Location:** Bridgewater Stage 12 - Level one  
**Material:** CLAY  
**Material Source:** ON SITE



Deer Park Laboratory  
 Factory 1 80-82 Rebecca Drive Ravenhall VIC 3023  
 Phone: 0435 751 756  
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Approved Signatory: Eranda Hippola  
 Snr lab Tech

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D21-3161A	D21-3161B	
Test Number	73	74	
Date Tested	19/05/2021	19/05/2021	
Time Tested	13:15	13:15	
Test Request #/Location	LOT 1217	LOT 1222	
Layer / Reduced Level	Layer 2	Layer 2	
Thickness of Layer (mm)	300	300	
Soil Description	Clay	Clay	
Test Depth (mm)	275	275	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	4	5	
Percentage of Dry Oversize (%) (AS1289.5.4.1)	**	**	
Field Wet Density (FWD) t/m <sup>3</sup>	1.85	1.89	
Field Moisture Content %	18.5	19.0	
Field Dry Density (FDD) t/m <sup>3</sup>	1.57	1.60	
Peak Converted Wet Density t/m <sup>3</sup>	**	**	
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	1.87	1.89	
Adj. Optimum Moisture Content % (AS1289.5.4.1)	22.9	23.2	
Adj. Field Moisture Content % (AS1289.5.4.1)	17.7	18.0	
Moisture Ratio % (AS1289.5.4.1)	**	**	
Adjusted Moisture Ratio % (AS1289.5.4.1)	77.0	77.5	
Moisture Variation (Wv) %	**	**	
Adjusted Moisture Variation %	5.0	5.0	
Hilf Density Ratio (%)	<b>99.0</b>	<b>100.0</b>	
Compaction Method	<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