



Terrafirma Laboratories - Deer Park Laboratory
 Factory 6 / 22-24 Westwood Drive, Deer Park Phone No: 8348 5596

COMPACTION ASSESSMENT BY NUCLEAR GAUGE METHOD

report No 9887-1
 date of issue 20-Nov-2017

Client Crowley Excavations Pty Ltd	Location Mickleham	tested by WF
Client address PO Box 380, Kilmore, 3764	Sewer	time 13.00 PM
Project Merrifield Estate Stage 28	Layer thickness (mm) 300	date 11-Oct-2017
Location Mickleham	checked by RS	

Test No	1	2	3	4	5	6
Field density test procedure AS1289.2.1.1 and 5.8.1						
location	MC 93 MS 94	MS 94 MS 95	MS 95 IS 96	MS 99 MS 100	MS 100 MS 102	MS 102 EP 103
Sampling procedures AS1289.1.1,1.2,1-Clause 6.4(b) depth from F.S.L.	0 m	0 m	0 m	0 m	0 m	0 m
measurement depth	275 mm	275 mm	275 mm	275 mm	275 mm	275 mm
field wet density	1.95 t/m ³	1.96 t/m ³	1.97 t/m ³	1.92 t/m ³	1.86 t/m ³	1.78 t/m ³
field dry density	1.70 t/m ³	1.76 t/m ³	1.68 t/m ³	1.59 t/m ³	1.76 t/m ³	1.80 t/m ³
field moisture content	16.4 %	15.8 %	17.2 %	18.3 %	16.8 %	16.6 %
laboratory compaction procedure AS1289 5.7.1						
compactive effort	standard 19.0	standard 19.0	standard 19.0	standard 19.0	standard 19.0	standard 19.0
oversize material retained on AS sieve	mm 19.0	mm 19.0	mm 19.0	mm 19.0	mm 19.0	mm 19.0
percent of oversize material	wet 0	wet 0	wet 0	wet 0	wet 0	wet 0
peak converted wet density	t/m ³ 2.036	t/m ³ 2.09	t/m ³ 2.16	t/m ³ 1.92	t/m ³ 2.45	t/m ³ 1.94
adjusted peak converted wet density	t/m ³ -	t/m ³ -	t/m ³ -	t/m ³ -	t/m ³ -	t/m ³ -
moisture variation from OMC (-dry, +wet)%	-2.0	-2.0	-1.5	-1.5	-0.5	-0.5
Moisture ratio	95.0	94.0	90.5	94.0	93.0	95.5
Hilf density ratio (R_{HD})	97.0	98.0	97.5	95.0	99.5	97.0

material description

Silty CLAY

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian national standards.
 requirements.
 Accredited for compliance with ISO/IEC 17025



COMPACTION ASSESSMENT

BY NUCLEAR GAUGE METHOD



Terrafirma Laboratories - Deer Park Laboratory
 Factory 6 / 22-24 Westwood Drive, Deer Park Phone No: 8348 5596

report No 9887-2
 date of issue 20-Nov-2017

tested by WF
 time 13.00 PM
 date 11-Oct-2017
 checked by RS

Location Sewer
 Layer thickness (mm) 300

Client Crowley Excavations Pty Ltd
 Client address PO Box 380, Kilmore, 3764
 Project Merrifield Estate Stage 28
 Location Mickleham

Test No	7	8	9	10
Field density test procedure AS1289.2.1.1 and 5.8.1				
location	MS 99 IS 104	MS 102 IS 105	MH97D EP 98	MS 99 MH 93A
Sampling procedures AS1289.1.1,1.2.1-Clause 6.4(b) depth from F.S.L.	0	0	0	0
measurement depth	275	275	275	275
field wet density	1.98	1.97	1.99	1.95
field dry density	1.70	1.76	1.68	1.59
field moisture content	17.4	17.8	18.1	18.6
laboratory compaction procedure AS1289 5.7.1				
compactive effort	standard	standard	standard	standard
oversize material retained on AS sieve	19.0	19.0	19.0	19.0
percent of oversize material	0	0	0	0
peak converted wet density	2.036	2.09	2.16	2.16
adjusted peak converted wet density	-	-	-	-
moisture variation from OMC (-dry, +wet)%	-1.5	-2.0	-2.0	-1.5
Moisture ratio	93.0	92.0	94.0	94.5
Hilf density ratio (R_{HD})	98.8	96.5	99.0	98.0
material description	Silty CLAY			

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Terrafirma Laboratories - Deer Park Laboratory
 Factory 6 / 22-24 Westwood Drive, Deer Park Phone No: 8348 5596
 Client Crowley Excavations PtyLtd

Client address PO Box 380, Kilmore, 3764
 Project Merrifield Estate Stage 28

Location Mickleham

COMPACTION ASSESSMENT
 BY NUCLEAR GAUGE METHOD

report No 9887-3
 date of issue 20-Nov-2017

tested by WF
 time 13.00 PM
 Date 11-Oct-2017

Location Sewer
 Layer thickness (mm) 300

test procedures AS1289.2.1.1 & 5.8.1

test No	11	12	13	14	15
location	MH 85 MS 85B	MS 85B MS 86	MS 86- EP 87	MS 86 MH 97D	MS 86 EP 87
Sampling procedures AS1289.1.1.1, 2.1- Clause 6.4.(b)					
depth from F.S.L.	0	0	0	0	0
measurement depth	275	275	275	275	275
field wet density	2.25	2.24	2.21	2.23	2.25
field dry density	2.16	2.14	2.14	2.12	2.16
field moisture content	4.0	3.0	3.0	3.5	3.0
laboratory compaction procedure AS1289.5.2.1 Modified Compaction					
modified maximum dry density	2.23	2.22	2.25	2.22	2.26
modified optimum moisture content	7.5	6.5	7.0	7.5	9.5
test procedure AS1289.5.4.1					
oversize material retained on AS sieve	19.0	19.0	19.0	19.0	19.0
percent of oversize material wet	0	0	0	0	0
percent of oversize material dry	0	0	0	0	0
adjusted modified maximum dry density	-	-	-	-	-
adjusted modified optimum moisture content %	-	-	-	-	-
moisture variation (-dry, +wet)	-3.0	-2.0	-4.0	-2.5	-5.5
moisture ratio (R_m)	70.0	70.5	74.5	69.5	71.5
dry density ratio (R_D)	97.5	98.5	95.0	96.5	98.5

material description

20 mm Class 3 Crushed Rock

compaction test details

date mat'l sampled 11-Oct-2017
 material source Holcim
 material stabilised
 time elapsed



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Approved Signature