



## COMPACTION ASSESSMENT

**CIVIL GEOTECHNICAL SERVICES**

6 - 8 Rose Avenue, Croydon, Vic 3136

Job No 17701  
 Report No 17701/R001  
 Date Issued 07/12/2017

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	B G G
Project	ASTON - STAGE 32	Date tested	21/11/17
Location	CRAIGIEBURN	Checked by	JHF

<b>Feature</b>	<b>CAPPING</b>	Layer thickness	150 mm	Time:	16:16:59
----------------	----------------	-----------------	--------	-------	----------

AS 12892.1.1 & 5.8.1

Test No	1	2	3	4	5	6
Location	Elevation Boulevard				Calibre Drive	Natural Drive
Chainage	40	90	140	190	300	490
Offset	1.8 north of kerb	1.8 south of kerb	1.8 north of kerb	1.8 south of kerb	1.8 east of kerb	1.8 west of kerb
Approximate depth from F.S.L.	m					
Measurement depth	mm					
Field wet density	t/m <sup>3</sup>					
Field dry density	t/m <sup>3</sup>					
Field moisture content	%					

Laboratory Compaction AS 1289.5.1.1 & 5.4.2 Assigned Values (See Report No 40AMWQADR)

Date of assignment	07/12/2017
Material source and location	40mm Capping - MVQ, Donnybrook
Compactive effort	STANDARD
Maximum Dry Density	t/m <sup>3</sup> 2.13
Optimum Moisture Content	% 10.0

Test procedure AS 1289.5.4.1

Oversize rock retained on sieve	mm	37.5	37.5	37.5	37.5	37.5	37.5
Percent of oversize material	wet	-	-	-	-	-	-
Percent of oversize material	dry	-	-	-	-	-	-
Adjusted Maximum Dry Density	t/m <sup>3</sup>	-	-	-	-	-	-
Adjusted Optimum Moisture Content	%	-	-	-	-	-	-

<b>Moisture Variation From Optimum Moisture Content</b>	7.5%	7.0%	7.5%	4.0%	4.0%	4.0%
	dry	dry	dry	dry	dry	dry

<b>Moisture Ratio ( R<sub>m</sub> )</b>	%	26.0	27.0	25.5	61.0	60.0	59.0
---	---	------	------	------	------	------	------

<b>Density Ratio ( R<sub>D</sub> )</b>	%	100.5	100.5	101.0	100.5	100.5	101.0
--	---	-------	-------	-------	-------	-------	-------



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/National standards. Accredited for compliance to ISO/IEC 17025. Accreditation No 9909

Approved Signatory : Justin Fry



## COMPACTION ASSESSMENT

**CIVIL GEOTECHNICAL SERVICES**

6 - 8 Rose Avenue, Croydon, Vic 3136

Job No 17701  
 Report No 17701/R002  
 Date Issued 06/02/2018

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	AC
Project	ASTON - STAGE 32	Date tested	05/02/18
Location	CRAGIEBURN	Checked by	JHF

<b>Feature</b>	<b>CLASS 4</b>	Layer thickness	150 mm	Time:	14:55:18
----------------	----------------	-----------------	--------	-------	----------

AS 12892.1.1 & 5.8.1

Test No	7	8	9	10	11	12
Location	Elevation Boulevard					
Chainage	320	270	220	170	120	70
Offset	2.3	2.3	2.4	2.4	2.5	2.5
	south	north	south	north	south	north
	of kerb	of kerb	of kerb	of kerb	of kerb	of kerb
Approximate depth from F.S.L.	m					
Measurement depth	mm					
Field wet density	t/m <sup>3</sup>					
Field dry density	t/m <sup>3</sup>					
Field moisture content	%					

Laboratory Compaction AS 1289.5.2.1 & 5.4.2 Assigned Values (See Report No 204MVDAU)

Date of assignment	20/12/2017
Material source and location	20mm Class 4 - MVQ, Donnybrook
Compactive effort	MODIFIED
Maximum Dry Density	t/m <sup>3</sup> 2.24
Optimum Moisture Content	% 7.5

Test procedure AS 1289.5.4.1

Test	7	8	9	10	11	12
Oversize rock retained on sieve	mm					
Percent of oversize material	wet					
Percent of oversize material	dry					
Adjusted Maximum Dry Density	t/m <sup>3</sup>					
Adjusted Optimum Moisture Content	%					

<b>Moisture Variation From Optimum Moisture Content</b>	3.5%	4.0%	4.0%	4.5%	4.0%	2.0%
	dry	dry	dry	dry	dry	dry

<b>Moisture Ratio ( R<sub>m</sub> )</b>	%	55.5	44.5	45.5	37.5	46.0	70.0
---	---	------	------	------	------	------	------

<b>Density Ratio ( R<sub>D</sub> )</b>	%	100.5	98.5	99.0	98.5	98.0	98.0
--	---	-------	------	------	------	------	------



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/National standards. Accredited for compliance to ISO/IEC 17025. Accreditation No 9909

Approved Signatory : Justin Fry



# COMPACTION ASSESSMENT

## CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon, Vic 3136

Job No 17701  
Report No 17701/R003  
Date Issued 06/02/2018

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	AC
Project	ASTON - STAGE 32	Date tested	05/02/18
Location	CRAGIEBURN	Checked by	JHF

Feature	CLASS 4	Layer thickness	150 mm	Time:	14:58:58
---------	---------	-----------------	--------	-------	----------

AS 12892.1.1 & 5.8.1

<b>Test No</b>		<b>13</b>					
Location		Elevation					
	Chainage	Boulevard					
	Offset	20					
		2.2					
		south					
		of kerb					
Approximate depth from F.S.L.	m						
Measurement depth	mm	125					
Field wet density	t/m <sup>3</sup>	2.26					
Field dry density	t/m <sup>3</sup>	2.19					
Field moisture content	%	3.5					

Laboratory Compaction AS 1289.5.2.1 & 5.4.2 Assigned Values (See Report No 204MVDAU)

Date of assignment		20/12/2017					
Material source and location		20mm Class 4 - MVQ, Donnybrook					
Compactive effort		MODIFIED					
Maximum Dry Density	t/m <sup>3</sup>	2.24					
Optimum Moisture Content	%	7.5					

Test procedure AS 1289.5.4.1

Oversize rock retained on sieve	mm	19.0					
Percent of oversize material	wet	-					
Percent of oversize material	dry	-					
Adjusted Maximum Dry Density	t/m <sup>3</sup>	-					
Adjusted Optimum Moisture Content	%	-					

Moisture Variation From Optimum Moisture Content		4.0% dry					
--	--	-------------	--	--	--	--	--

Moisture Ratio ( R <sub>m</sub> )	%	45.0					
-----------------------------------	---	------	--	--	--	--	--

Density Ratio ( R <sub>D</sub> )	%	98.0					
----------------------------------	---	------	--	--	--	--	--



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/National standards. Accredited for compliance to ISO/IEC 17025. Accreditation No 9909

Approved Signatory : Justin Fry



## COMPACTION ASSESSMENT

**CIVIL GEOTECHNICAL SERVICES**

6 - 8 Rose Avenue, Croydon, Vic 3136

Job No 17701  
 Report No 17701/R004  
 Date Issued 07/02/2018

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	AC
Project	ASTON - STAGE 32	Date tested	07/02/18
Location	CRAGIEBURN	Checked by	JHF

<b>Feature</b>	<b>CLASS 3</b>	Layer thickness	150 mm	Time:	08:27:03
----------------	----------------	-----------------	--------	-------	----------

AS 12892.1.1 & 5.8.1

Test No	14	15	16	17		
Location	Elevation Boulevard					
Chainage	320	270	220	170		
Offset	1.8	1.8	1.8	1.8		
	north	south	north	south		
	of kerb	of kerb	of kerb	of kerb		
Approximate depth from F.S.L.	m					
Measurement depth	mm	125	125	125	125	
Field wet density	t/m <sup>3</sup>	2.40	2.37	2.34	2.36	
Field dry density	t/m <sup>3</sup>	2.25	2.24	2.23	2.24	
Field moisture content	%	6.5	5.5	5.0	5.0	

Laboratory Compaction AS 1289.5.2.1 & 5.4.2 Assigned Values (See Report No 203MVDBS)

Date of assignment	02/02/2018
Material source and location	20mm Class 3 - MVQ, Donnybrook
Compactive effort	MODIFIED
Maximum Dry Density	t/m <sup>3</sup> 2.27
Optimum Moisture Content	%

Test procedure AS 1289.5.4.1

Test No	14	15	16	17		
Oversize rock retained on sieve	mm	19.0	19.0	19.0	19.0	
Percent of oversize material	wet	-	-	-	-	
Percent of oversize material	dry	-	-	-	-	
Adjusted Maximum Dry Density	t/m <sup>3</sup>	-	-	-	-	
Adjusted Optimum Moisture Content	%	-	-	-	-	

<b>Moisture Variation From Optimum Moisture Content</b>	1.5%	2.5%	3.5%	3.0%		
	dry	dry	dry	dry		

<b>Moisture Ratio ( R<sub>m</sub> )</b>	%	81.5	71.5	59.0	64.5	
---	---	------	------	------	------	--

<b>Density Ratio ( R<sub>D</sub> )</b>	%	<b>99.0</b>	<b>98.5</b>	<b>98.0</b>	<b>98.5</b>	
--	---	-------------	-------------	-------------	-------------	--



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/National standards. Accredited for compliance to ISO/IEC 17025. Accreditation No 9909

Approved Signatory : Justin Fry



# COMPACTION ASSESSMENT

## CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon, Vic 3136

Job No 17701  
Report No 17701/R005  
Date Issued 07/02/2018

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	AC
Project	ASTON - STAGE 32	Date tested	07/02/18
Location	CRAGIEBURN	Checked by	JHF

Feature	CLASS 3	Layer thickness	170 mm	Time:	08:29:00
---------	---------	-----------------	--------	-------	----------

AS 12892.1.1 & 5.8.1

Test No		18	19				
Location		Natural Drive	Abington Street				
Chainage		490	15				
Offset		1.8 east of kerb	1.8 west of kerb				
Approximate depth from F.S.L.	m						
Measurement depth	mm	150	150				
Field wet density	t/m <sup>3</sup>	2.35	2.38				
Field dry density	t/m <sup>3</sup>	2.24	2.27				
Field moisture content	%	5.0	5.0				

Laboratory Compaction AS 1289.5.2.1 & 5.4.2 Assigned Values (See Report No 203MVDBS)

Date of assignment		02/02/2018					
Material source and location		20mm Class 3 - MVQ, Donnybrook					
Compactive effort		MODIFIED					
Maximum Dry Density	t/m <sup>3</sup>	2.27					
Optimum Moisture Content	%	8.0					

Test procedure AS 1289.5.4.1

Oversize rock retained on sieve	mm	19.0	19.0				
Percent of oversize material	wet	-	-				
Percent of oversize material	dry	-	-				
Adjusted Maximum Dry Density	t/m <sup>3</sup>	-	-				
Adjusted Optimum Moisture Content	%	-	-				

Moisture Variation From Optimum Moisture Content		3.5% dry	3.0% dry				
--	--	----------	----------	--	--	--	--

Moisture Ratio ( R <sub>m</sub> )	%	59.0	62.0				
-----------------------------------	---	------	------	--	--	--	--

Density Ratio ( R <sub>D</sub> )	%	98.5	99.5				
----------------------------------	---	------	------	--	--	--	--



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/National standards. Accredited for compliance to ISO/IEC 17025. Accreditation No 9909

Approved Signatory : Justin Fry



# COMPACTION ASSESSMENT

## CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon, Vic 3136

Job No 17701  
Report No 17701/R006  
Date Issued 07/02/2018

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	AC
Project	ASTON - STAGE 32	Date tested	07/02/18
Location	CRAGIEBURN	Checked by	JHF

Feature	CLASS 3	Layer thickness	240 mm	Time:	08:31:13
---------	---------	-----------------	--------	-------	----------

AS 12892.1.1 & 5.8.1						
<b>Test No</b>		<b>20</b>				
Location		Calibre Avenue				
	Chainage	305				
	Offset	1.8 east of kerb				
Approximate depth from F.S.L.	m					
Measurement depth	mm	225				
Field wet density	t/m <sup>3</sup>	2.36				
Field dry density	t/m <sup>3</sup>	2.24				
Field moisture content	%	5.0				
Laboratory Compaction AS 1289.5.2.1 & 5.4.2 Assigned Values (See Report No 203MVDBS)						
Date of assignment	02/02/2018					
Material source and location	20mm Class 3 - MVQ, Donnybrook					
Compactive effort	MODIFIED					
Maximum Dry Density	t/m <sup>3</sup>	2.27				
Optimum Moisture Content	%	8.0				
Test procedure AS 1289.5.4.1						
Oversize rock retained on sieve	mm	19.0				
Percent of oversize material	wet	-				
Percent of oversize material	dry	-				
Adjusted Maximum Dry Density	t/m <sup>3</sup>	-				
Adjusted Optimum Moisture Content	%	-				
<b>Moisture Variation From Optimum Moisture Content</b>		3.0% dry				
<b>Moisture Ratio ( R<sub>m</sub> )</b>	%	62.5				
<b>Density Ratio ( R<sub>D</sub> )</b>	%	98.5				



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/National standards. Accredited for compliance to ISO/IEC 17025. Accreditation No 9909

Approved Signatory : Justin Fry



## COMPACTION ASSESSMENT

**CIVIL GEOTECHNICAL SERVICES**

6 - 8 Rose Avenue, Croydon, Vic 3136

Job No 17701  
 Report No 17701/R007  
 Date Issued 08/02/2018

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	AC
Project	ASTON - STAGE 32	Date tested	08/02/18
Location	CRAGIEBURN	Checked by	JHF

<b>Feature</b>	<b>CLASS 3</b>	Layer thickness	150 mm	Time:	08:38:19
----------------	----------------	-----------------	--------	-------	----------

AS 12892.1.1 & 5.8.1

Test No	21	22	23			
Location	Elevation Boulevard					
Chainage	120	70	20			
Offset	2.5	2.7	3.0			
	south of kerb	north of kerb	south of kerb			
Approximate depth from F.S.L.	m					
Measurement depth	mm	125	125	125		
Field wet density	t/m <sup>3</sup>	2.37	2.29	2.29		
Field dry density	t/m <sup>3</sup>	2.23	2.24	2.23		
Field moisture content	%	6.0	2.5	2.5		

Laboratory Compaction AS 1289.5.2.1 & 5.4.2 Assigned Values (See Report No 203MVDBS)

Date of assignment	08/02/2018
Material source and location	20mm Class 3 - MVQ, Donnybrook
Compactive effort	MODIFIED
Maximum Dry Density	t/m <sup>3</sup> 2.27
Optimum Moisture Content	%

Test procedure AS 1289.5.4.1

Test No	21	22	23			
Oversize rock retained on sieve	mm	19.0	19.0	19.0		
Percent of oversize material	wet	-	-	-		
Percent of oversize material	dry	-	-	-		
Adjusted Maximum Dry Density	t/m <sup>3</sup>	-	-	-		
Adjusted Optimum Moisture Content	%	-	-	-		

<b>Moisture Variation From Optimum Moisture Content</b>	2.0%	5.5%	5.5%			
	dry	dry	dry			

<b>Moisture Ratio ( R<sub>m</sub> )</b>	%	75.0	29.5	32.0		
---	---	------	------	------	--	--

<b>Density Ratio ( R<sub>D</sub> )</b>	%	<b>98.0</b>	<b>98.5</b>	<b>98.0</b>		
--	---	-------------	-------------	-------------	--	--



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/National standards. Accredited for compliance to ISO/IEC 17025. Accreditation No 9909

Approved Signatory : Justin Fry



## COMPACTION ASSESSMENT

**CIVIL GEOTECHNICAL SERVICES**

6 - 8 Rose Avenue, Croydon, Vic 3136

Job No 17701  
 Report No 17701/R008  
 Date Issued 19/01/2018

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	AC
Project	ASTON - STAGE 32	Date tested	12/02/18
Location	CRAGIEBURN	Checked by	JHF

<b>Feature</b>	<b>CLASS 2</b>	Layer thickness	150 mm	Time:	09:12:58
----------------	----------------	-----------------	--------	-------	----------

AS 12892.1.1 & 5.8.1

Test No	24	25	26	27	28	29
Location	Elevation Boulevard					
Chainage	320	270	220	170	120	70
Offset	2.5	2.7	2.3	2.5	3.0	3.0
	south	north	south	north	south	north
	of kerb	of kerb	of kerb	of kerb	of kerb	of kerb
Approximate depth from F.S.L.	m					
Measurement depth	mm					
Field wet density	t/m <sup>3</sup>					
Field dry density	t/m <sup>3</sup>					
Field moisture content	%					

Laboratory Compaction AS 1289.5.2.1 & 5.4.2 Assigned Values (See Report No 202MVDBU)

Date of assignment	19/01/2018
Material source and location	20mm Class 2 - MVQ, Donnybrook
Compactive effort	MODIFIED
Maximum Dry Density	t/m <sup>3</sup> 2.27
Optimum Moisture Content	% 8.0

Test procedure AS 1289.5.4.1

Oversize rock retained on sieve	mm	19.0	19.0	19.0	19.0	19.0	19.0
Percent of oversize material	wet	-	-	-	-	-	-
Percent of oversize material	dry	-	-	-	-	-	-
Adjusted Maximum Dry Density	t/m <sup>3</sup>	-	-	-	-	-	-
Adjusted Optimum Moisture Content	%	-	-	-	-	-	-

<b>Moisture Variation From Optimum Moisture Content</b>	4.5%	5.0%	4.5%	4.5%	4.5%	4.0%
	dry	dry	dry	dry	dry	dry

<b>Moisture Ratio ( R<sub>m</sub> )</b>	%	47.5	40.5	46.0	42.5	46.0	49.0
---	---	------	------	------	------	------	------

<b>Density Ratio ( R<sub>D</sub> )</b>	%	<b>98.0</b>	<b>99.0</b>	<b>98.0</b>	<b>98.5</b>	<b>98.0</b>	<b>98.0</b>
--	---	-------------	-------------	-------------	-------------	-------------	-------------



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/National standards. Accredited for compliance to ISO/IEC 17025. Accreditation No 9909

Approved Signatory : Justin Fry



# COMPACTION ASSESSMENT

## CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon, Vic 3136

Job No 17701  
Report No 17701/R009  
Date Issued 12/02/2018

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	AC
Project	ASTON - STAGE 32	Date tested	12/02/18
Location	CRAGIEBURN	Checked by	JHF

Feature	CLASS 2	Layer thickness	150 mm	Time:	09:15:23
---------	---------	-----------------	--------	-------	----------

AS 12892.1.1 & 5.8.1

<b>Test No</b>	<b>30</b>					
Location	Elevation Boulevard					
Chainage Offset	20 2.2 south of kerb					
Approximate depth from F.S.L.	m					
Measurement depth	mm	125				
Field wet density	t/m <sup>3</sup>	2.32				
Field dry density	t/m <sup>3</sup>	2.22				
Field moisture content	%	4.0				

Laboratory Compaction AS 1289.5.2.1 & 5.4.2 Assigned Values (See Report No 202MVDBU)

Date of assignment	19/01/2018
Material source and location	20mm Class 2 - MVQ, Donnybrook
Compactive effort	MODIFIED
Maximum Dry Density	t/m <sup>3</sup> 2.27
Optimum Moisture Content	% 8.0

Test procedure AS 1289.5.4.1

Oversize rock retained on sieve	mm	19.0				
Percent of oversize material	wet	-				
Percent of oversize material	dry	-				
Adjusted Maximum Dry Density	t/m <sup>3</sup>	-				
Adjusted Optimum Moisture Content	%	-				

<b>Moisture Variation From Optimum Moisture Content</b>		4.0% dry				
---	--	-------------	--	--	--	--

<b>Moisture Ratio ( R<sub>m</sub> )</b>	%	51.5				
---	---	------	--	--	--	--

<b>Density Ratio ( R<sub>D</sub> )</b>	%	98.0				
--	---	------	--	--	--	--



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/National standards. Accredited for compliance to ISO/IEC 17025. Accreditation No 9909

Approved Signatory : Justin Fry