



4041

TEST CERTIFICATE

Determination of Liquid and Plastic Limits

Tested in Accordance with BS1377-2: 1990: Clause 4.4 & 5: One Point Method

i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS



Client: LMB Geosolutions Ltd
Client Address: 28 Dresden Road
London
N19 3BD
Contact: Philip Lewis
Site Name: Castlewood House
Site Address: Not Given

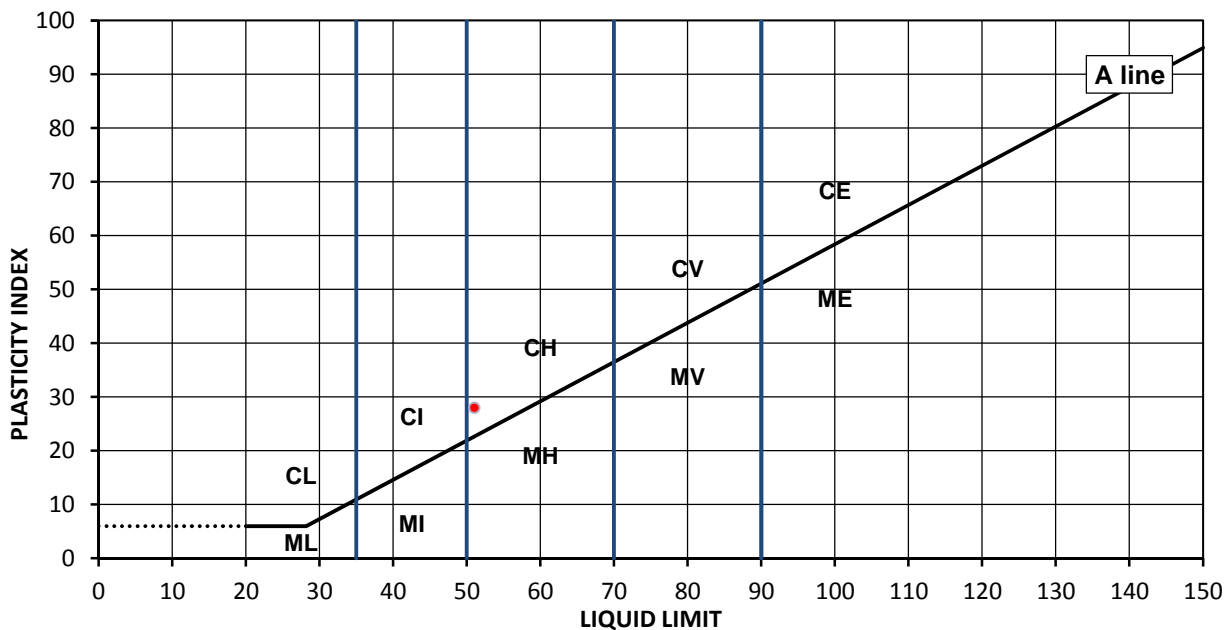
Client Reference: LMB-CASTLEWOOD
Job Number: 18-92021
Date Sampled: 19/06/2018
Date Received: 20/06/2018
Date Tested: 17/07/2018
Sampled By: PIL/DN

Test Results

Laboratory Reference: 998208
Hole No.: BHDA104
Sample Reference: Not Given
Soil Description: Dark brown very sandy GRAVEL
Sample Preparation: Tested after washing to remove >425um

Depth Top [m]: 1.20
Depth Base [m]: Not Given
Sample Type: B

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
20	51	23	28	44



Legend, based on BS 5930:2015 Code of practice for site investigations

C	Clay	Plasticity	Liquid Limit
M	Silt	L	Low
		I	Medium
		H	High
		V	Very high
		E	Extremely high
	Organic	O	append to classification for organic material (eg CHO)

Remarks:

Approved:

Dariusz Piotrowski
PL Laboratory
Manager
Date Reported: 20/07/2018

Signed:

Darren Berrill
Geotechnical General
Manager

for and on behalf of i2 Analytical Ltd

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Contact: Philip Lewis
Site Name: Castlewood House
Site Address: Not Given

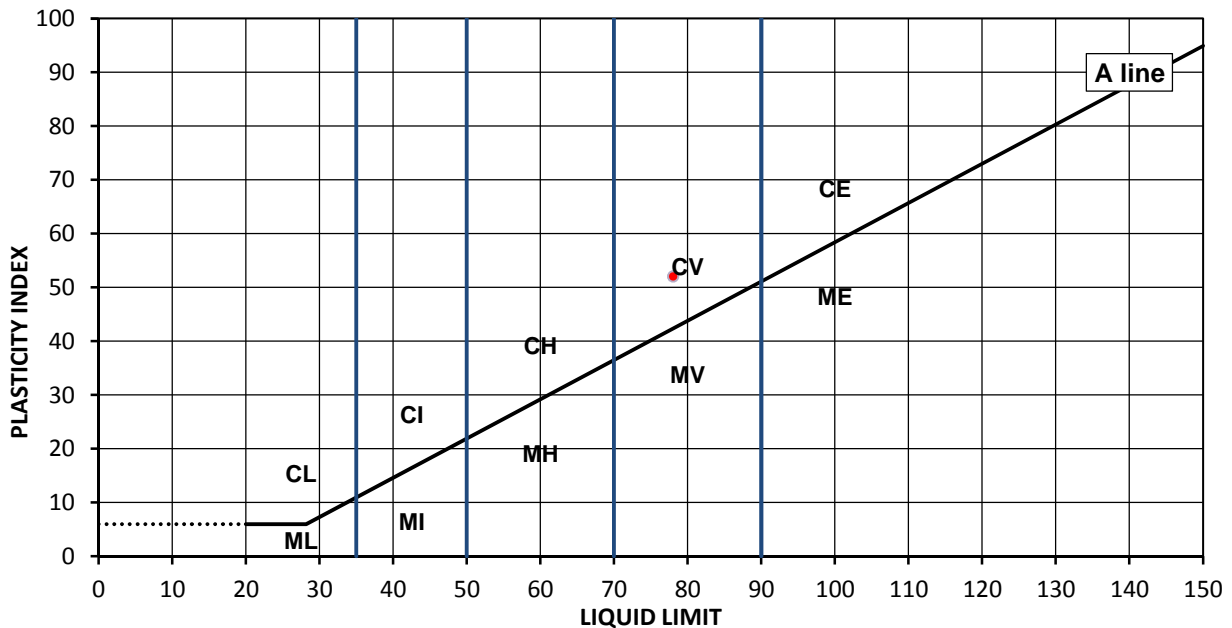
Client Reference: LMB-CASTLEWOOD
Job Number: 18-92021
Date Sampled: 20/06/2018
Date Received: 20/06/2018
Date Tested: 16/07/2018
Sampled By: PIL/DN

Test Results

Laboratory Reference: 998212
Hole No.: BHDA104
Sample Reference: Not Given
Soil Description: Dark brown CLAY
Sample Preparation: Tested in natural condition

Depth Top [m]: 5.50
Depth Base [m]: Not Given
Sample Type: D

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
23	78	26	52	100



Legend, based on BS 5930:2015 Code of practice for site investigations

C	Clay	Plasticity	Liquid Limit
M	Silt	L	below 35
		I	35 to 50
		H	50 to 70
		V	70 to 90
		E	exceeding 90
	Organic	O	append to classification for organic material (eg CHO)

Remarks:

Approved:

Dariusz Piotrowski
PL Laboratory
Manager
Date Reported: 20/07/2018

Signed:

Darren Berrill
Geotechnical General
Manager

for and on behalf of i2 Analytical Ltd

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Client: LMB Geosolutions Ltd
Client Address: 28 Dresden Road
London
N19 3BD
Contact: Philip Lewis
Site Name: Castlewood House
Site Address: Not Given

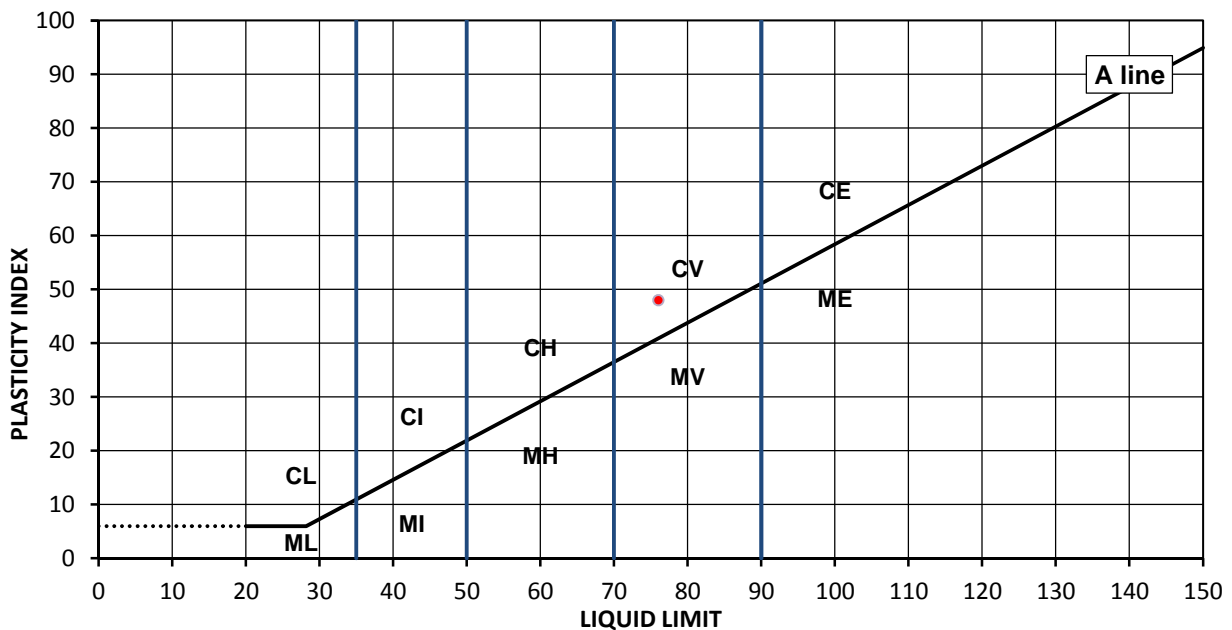
Client Reference: LMB-CASTLEWOOD
Job Number: 18-92021
Date Sampled: 21/06/2018
Date Received: 20/06/2018
Date Tested: 16/07/2018
Sampled By: PIL/DN

Test Results

Laboratory Reference: 998214
Hole No.: BHDA104
Sample Reference: Not Given
Soil Description: Dark brown CLAY
Sample Preparation: Tested in natural condition

Depth Top [m]: 9.50
Depth Base [m]: Not Given
Sample Type: D

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
27	76	28	48	100



Legend, based on BS 5930:2015 Code of practice for site investigations

C	Clay	Plasticity	Liquid Limit
M	Silt	L	Low
		I	Medium
		H	High
		V	Very high
		E	Extremely high
	Organic	O	append to classification for organic material (eg CHO)

Remarks:

Approved:

Dariusz Piotrowski
PL Laboratory
Manager
Date Reported: 20/07/2018

Signed:

Darren Berrill
Geotechnical General
Manager

for and on behalf of i2 Analytical Ltd

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Client: LMB Geosolutions Ltd
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Contact: Philip Lewis
Site Name: Castlewood House
Site Address: Not Given

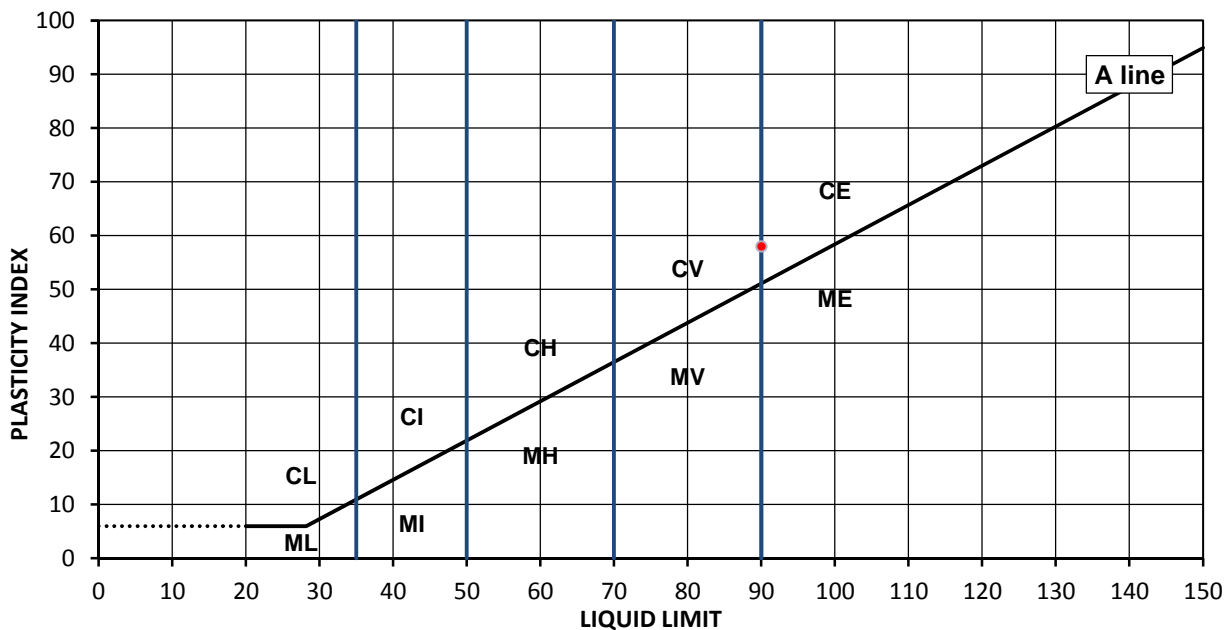
Client Reference: LMB-CASTLEWOOD
Job Number: 18-92021
Date Sampled: 22/06/2018
Date Received: 20/06/2018
Date Tested: 16/07/2018
Sampled By: PIL/DN

Test Results

Laboratory Reference: 998217
Hole No.: BHDA104
Sample Reference: Not Given
Soil Description: Dark brown CLAY
Sample Preparation: Tested in natural condition

Depth Top [m]: 14.00
Depth Base [m]: Not Given
Sample Type: D

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
20	90	32	58	100



Legend, based on BS 5930:2015 Code of practice for site investigations

C	Clay	Plasticity	Liquid Limit
M	Silt	L	Low
		I	Medium
		H	High
		V	Very high
		E	Extremely high
	Organic	O	append to classification for organic material (eg CHO)

Remarks:

Approved:

Dariusz Piotrowski
PL Laboratory
Manager
Date Reported: 20/07/2018

Signed:

Darren Berrill
Geotechnical General
Manager

for and on behalf of i2 Analytical Ltd

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Determination of Liquid and Plastic Limits

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Croxley Green Business Park
Watford Herts WD18 8YS



Client: LMB Geosolutions Ltd
Client Address: 28 Dresden Road
London
N19 3BD
Contact: Philip Lewis
Site Name: Castlewood House
Site Address: Not Given

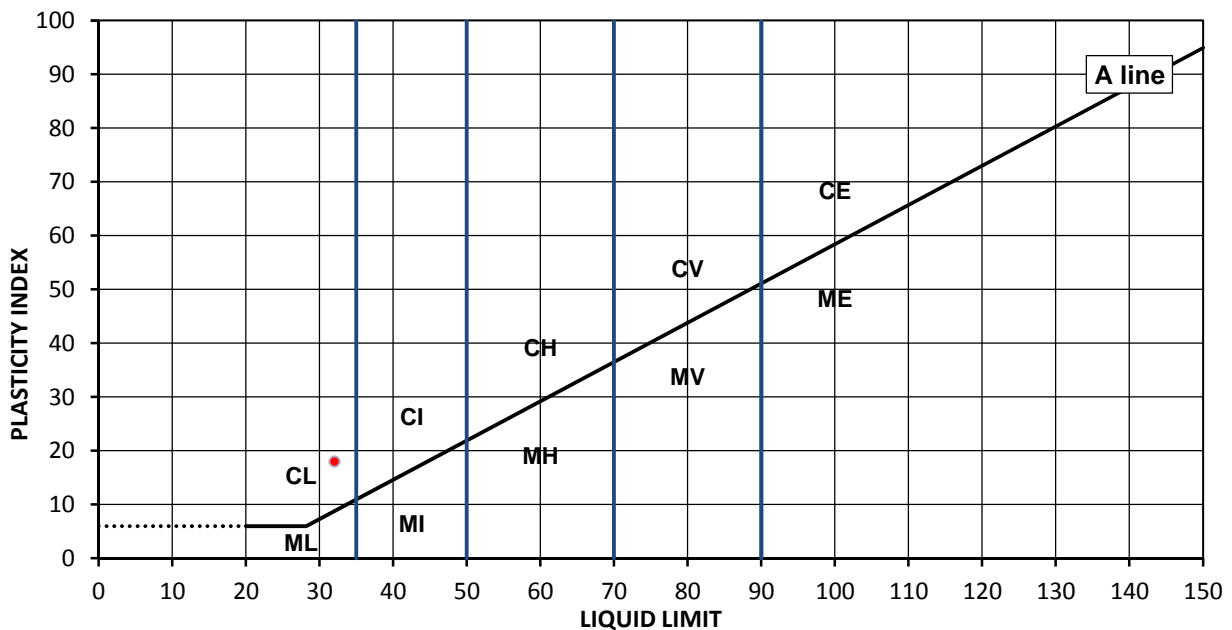
Client Reference: LMB-CASTLEWOOD
Job Number: 18-92021
Date Sampled: 22/06/2018
Date Received: 20/06/2018
Date Tested: 16/07/2018
Sampled By: PIL/DN

Test Results

Laboratory Reference: 998221
Hole No.: BHDA104
Sample Reference: Not Given
Soil Description: Grey very sandy CLAY
Sample Preparation: Tested in natural condition

Depth Top [m]: 26.50
Depth Base [m]: Not Given
Sample Type: D

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
12	32	14	18	100



Legend, based on BS 5930:2015 Code of practice for site investigations

C	Clay	Plasticity	Liquid Limit
M	Silt	L	Low
		I	Medium
		H	High
		V	Very high
		E	Extremely high
	Organic	O	append to classification for organic material (eg CHO)

Remarks:

Approved:

Dariusz Piotrowski
PL Laboratory
Manager
Date Reported: 20/07/2018

Signed:

Darren Berrill
Geotechnical General
Manager

for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

Summary of Classification Test Results

i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS



Client: LMB Geosolutions Ltd
Client Address: 28 Dresden Road
London
N19 3BD
Contact: Philip Lewis
Site Name: Castlewood House
Site Address: Not Given

Client Reference: LMB-CASTLEWOOD
Job Number: 18-92021
Date Sampled: 18/06 - 28/06/2018
Date Received: 20/06/2018
Date Tested: 16/07 - 17/07/2018
Sampled By: PIL/DN

Test results

Laboratory Reference	Hole No.	Sample				Soil Description	M/C %	Atterberg				Density		Total Porosity Mg/m3
		Reference	Top depth [m]	Base depth [m]	Type			% Passing 425um %	LL %	PL %	PI %	bulk Mg/m3	PD Mg/m3	
998167	BHDA101	Not Given	0.50	Not Given	B	Brown very sandy GRAVEL	17							
998168	BHDA101	Not Given	1.20	Not Given	B	Yellowish brown slightly gravelly sandy CLAY	18							
998169	BHDA101	Not Given	6.50	Not Given	B	Dark grey CLAY	25	100	74	29	45			
998172	BHDA101	Not Given	11.00	Not Given	U	Brown CLAY	27	100	78	33	45			
998174	BHDA101	Not Given	17.00	Not Given	U	Yellowish brown slightly sandy CLAY	20	100	47	23	24			
998177	BHDA101	Not Given	26.00	Not Given	U	Brown to grey clayey SAND	12	100	26	15	11			
998179	BHDA101	Not Given	42.50	Not Given	D	Greyish brown slightly sandy slightly gravelly slightly clayey SILT	14							
998180	BHDA102	Not Given	0.50	Not Given	B	Brown very sandy GRAVEL	14							
998181	BHDA102	Not Given	2.00	Not Given	B	Yellowish brown gravelly SAND	15							
998182	BHDA102	Not Given	3.00	Not Given	B	Yellowish brown very sandy GRAVEL	4.8							

Comments:

Approved:

Dariusz Piotrowski
PL Laboratory Manager
Geotechnical Section

Date Reported: 20/07/2018

Signed:

Darren Berrill
Geotechnical General Manager

for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

Summary of Classification Test Results

i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS



Client: LMB Geosolutions Ltd
Client Address: 28 Dresden Road
London
N19 3BD
Contact: Philip Lewis
Site Name: Castlewood House
Site Address: Not Given

Client Reference: LMB-CASTLEWOOD
Job Number: 18-92021
Date Sampled: 18/06 - 27/06/2018
Date Received: 20/06/2018
Date Tested: 16/07 - 17/07/2018
Sampled By: PIL/DN

Test results

Laboratory Reference	Hole No.	Sample				Soil Description	M/C %	Atterberg				Density		Total Porosity Mg/m3
		Reference	Top depth [m]	Base depth [m]	Type			% Passing 425um %	LL %	PL %	PI %	bulk Mg/m3	PD Mg/m3	
998184	BHDA102	Not Given	9.00	Not Given	D	Dark brown CLAY	26	100	79	29	50			
998188	BHDA102	Not Given	16.50	Not Given	D	Dark brown CLAY	17	100	74	26	48			
998190	BHDA102	Not Given	21.50	Not Given	U	Brown gravelly slightly sandy CLAY	22	100	52	24	28			
998192	BHDA102	Not Given	27.00	Not Given	D	Yellowish brown slightly sandy CLAY	19	100	56	21	35			
998195	BHDA102	Not Given	33.00	Not Given	D	Mottled grey CLAY	25	100	98	34	64			
998198	BHDA103	Not Given	2.00	Not Given	B	Yellowish brown gravelly SAND	10							
998199	BHDA103	Not Given	3.00	Not Given	B	Yellowish brown very sandy GRAVEL	3.5							
998201	BHDA103	Not Given	8.00	Not Given	U	Brown CLAY	25	100	65	29	36			
998203	BHDA103	Not Given	14.00	Not Given	U	Brown CLAY	24	100	74	29	45			
998205	BHDA103	Not Given	20.00	Not Given	U	Brown slightly gravelly CLAY	23	88	66	30	36			

Comments:

Approved:

Dariusz Piotrowski
PL Laboratory Manager
Geotechnical Section

Date Reported: 20/07/2018

Signed:

Darren Berrill
Geotechnical General Manager

for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

Summary of Classification Test Results

i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS



Client: LMB Geosolutions Ltd
Client Address: 28 Dresden Road
London
N19 3BD
Contact: Philip Lewis
Site Name: Castlewood House
Site Address: Not Given

Client Reference: LMB-CASTLEWOOD
Job Number: 18-92021
Date Sampled: 19/06 - 22/06/2018
Date Received: 20/06/2018
Date Tested: 16/07 - 17/07/2018
Sampled By: PIL/DN

Test results

Laboratory Reference	Hole No.	Sample				Soil Description	M/C %	Atterberg				Density		Total Porosity Mg/m3
		Reference	Top depth [m]	Base depth [m]	Type			% Passing 425um %	LL %	PL %	PI %	bulk Mg/m3	PD Mg/m3	
998207	BHDA104	Not Given	0.50	Not Given	B	Dark brown slightly sandy gravelly CLAY	23							
998208	BHDA104	Not Given	1.20	Not Given	B	Dark brown very sandy GRAVEL	20	44	51	23	28			
998209	BHDA104	Not Given	2.00	Not Given	B	Yellowish brown very gravelly SAND	14							
998210	BHDA104	Not Given	3.00	Not Given	B	Yellowish brown very gravelly SAND	9.5							
998212	BHDA104	Not Given	5.50	Not Given	D	Dark brown CLAY	23	100	78	26	52			
998214	BHDA104	Not Given	9.50	Not Given	D	Dark brown CLAY	27	100	76	28	48			
998217	BHDA104	Not Given	14.00	Not Given	D	Dark brown CLAY	20	100	90	32	58			
998221	BHDA104	Not Given	26.50	Not Given	D	Grey very sandy CLAY	12	100	32	14	18			

Comments:

Approved:

Dariusz Piotrowski
PL Laboratory Manager
Geotechnical Section

Date Reported: 20/07/2018

Signed:

Darren Berrill
Geotechnical General Manager

for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE**Determination of Particle Size Distribution**

i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS



Tested in Accordance with BS1377:Part 2:1990, clause 9.2

Client: LMB Geosolutions Ltd
Client Address: 28 Dresden Road
London
N19 3BD

Client Reference: LMB-CASTLEWOOD
Job Number: 18-92021
Date Sampled: 26/06/2018
Date Received: 20/06/2018
Date Tested: 16/07/2018
Sampled By: PIL/DN

Contact: Philip Lewis
Site Name: Castlewood House
Site Address: Not Given

TEST RESULTS

Laboratory Reference: 998167

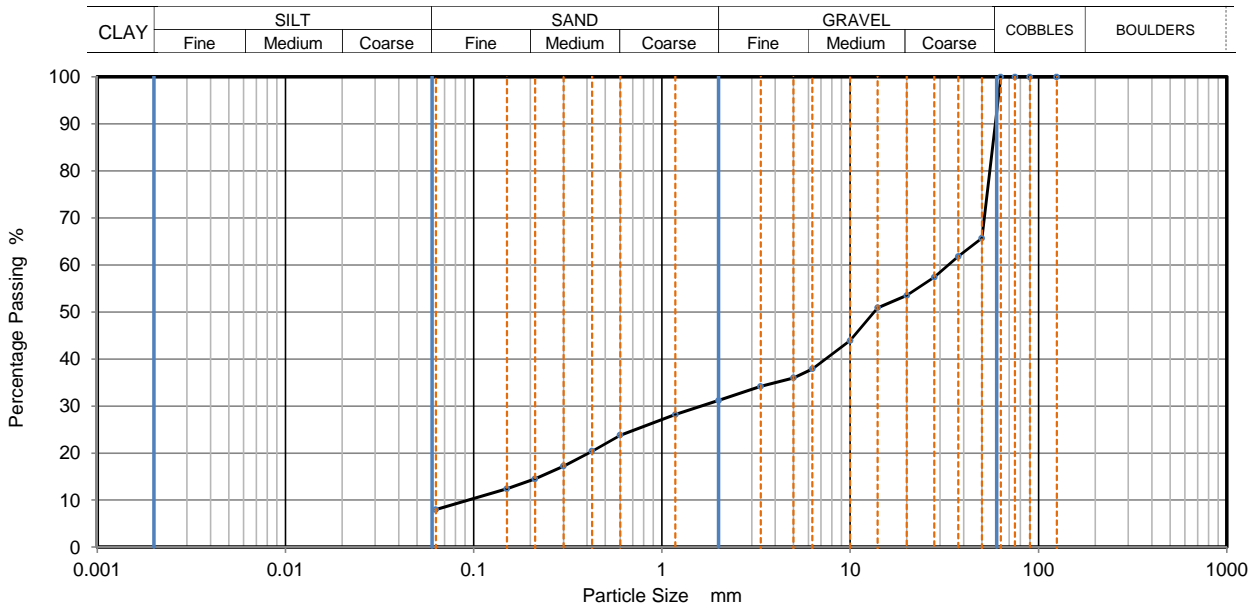
Sample Reference: Not Given

Sample description: Brown very sandy GRAVEL

Sample Type: B

Location: BHDA101
Supplier: Not Given

Depth Top [m]: 0.50
Depth Base [m]: Not Given



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	66		
37.5	62		
28	57		
20	54		
14	51		
10	44		
6.3	38		
5	36		
3.35	34		
2	31		
1.18	28		
0.6	24		
0.425	20		
0.3	17		
0.212	15		
0.15	12		
0.063	8		

Dry Mass of sample [g]: 1260

Sample Proportions	% dry mass
Very coarse	0.00
Gravel	68.80
Sand	23.10
Fines <0.063mm	8.00

Grading Analysis		
D100	mm	63
D60	mm	33.4
D30	mm	1.62
D10	mm	0.0935
Uniformity Coefficient		360
Curvature Coefficient		0.84

Remarks

Preparation and testing in accordance with BS1377 unless noted below
The material submitted - fails to meet the minimum mass requirements as stated in BS1377 Part 2 Table 3

Approved:

Signed:

Dariusz Piotrowski
PL Laboratory Manager
Geotechnical Section

Darren Berrill
Geotechnical General
Manager

Date Reported: 20/07/2018

for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

Determination of Particle Size Distribution

i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
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Tested in Accordance with BS1377:Part 2:1990, clause 9.2

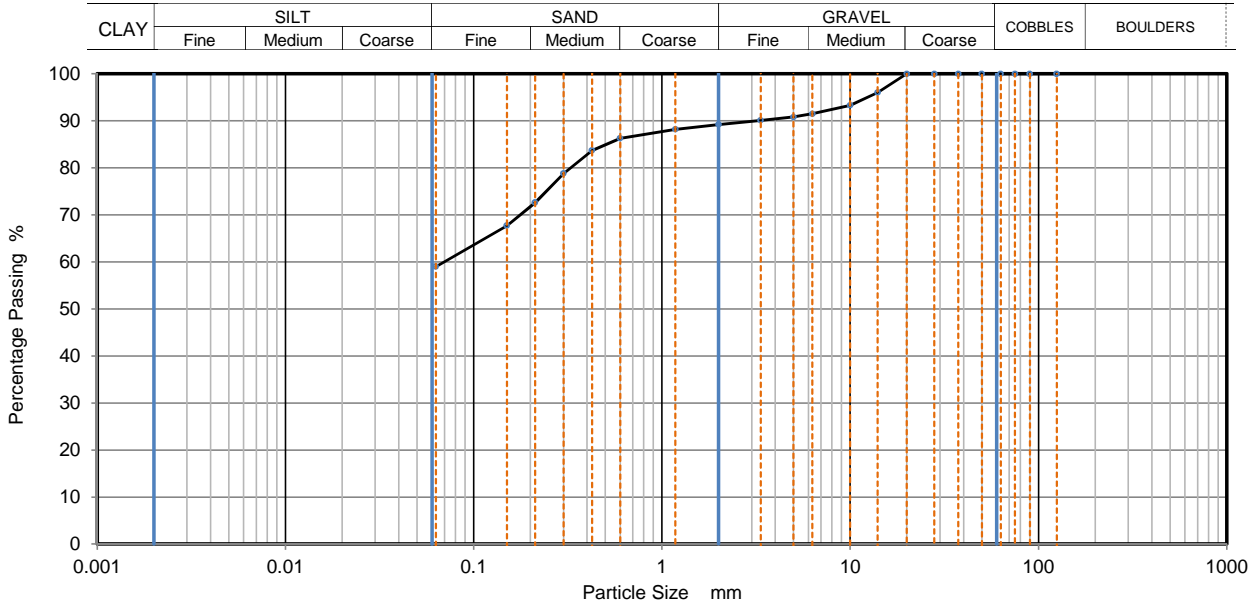
Client: LMB Geosolutions Ltd
Client Address: 28 Dresden Road
London
N19 3BD

Client Reference: LMB-CASTLEWOOD
Job Number: 18-92021
Date Sampled: 27/06/2018
Date Received: 20/06/2018
Date Tested: 16/07/2018
Sampled By: PIL/DN

Contact: Philip Lewis
Site Name: Castlewood House
Site Address: Not Given

TEST RESULTS Laboratory Reference: 998168
Sample description: Yellowish brown slightly gravelly sandy CLAY
Location: BHDA101
Supplier: Not Given

Sample Reference: Not Given
Sample Type: B
Depth Top [m]: 1.20
Depth Base [m]: Not Given



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	96		
10	93		
6.3	92		
5	91		
3.35	90		
2	89		
1.18	88		
0.6	86		
0.425	84		
0.3	79		
0.212	73		
0.15	68		
0.063	59		

Dry Mass of sample [g]: 831

Sample Proportions	% dry mass
Very coarse	0.00
Gravel	10.80
Sand	30.00
Fines <0.063mm	59.10

Grading Analysis	
D100	mm 20
D60	mm 0.0687
D30	mm
D10	mm
Uniformity Coefficient	
Curvature Coefficient	

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Approved:

Dariusz Piotrowski
PL Laboratory Manager
Geotechnical Section

Signed:

Darren Berrill
Geotechnical General
Manager

Date Reported: 20/07/2018

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