

**Determination of Thermal Conductivity of Soil and Soft Rock
by Thermal Needle Probe Procedure ASTM D 5334 - 00**

Borehole Number: BH8
Sample No: -
Depth (m) 2.00

Description:
Firm brown slightly organic silty CLAY
with rare coarse and and fine gravel

Sample preparation: Sample compacted using 2.5kg hammer method in 3 layers
according to procedures detailed in BS1377 : Part 4 :
Clause 3.3 : 1990, to produce a cylindrical specimen

Sample diameter: 101.7 mm

Sample length: 202.9 mm

Bulk Density 1.70 Mg/m³

Dry Density 1.15 Mg/m³

Moisture Content 47 %

Thermal Conductivity **1.061** W/(m.k)

Remarks:

Checked and
Approved

Initials:

SB

Date: 14/06/2013

Project Number:

GEO / 19780

Project Name:

TOTTENHAM MARSH

Project Number 51603-00

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**Determination of Thermal Conductivity of Soil and Soft Rock
by Thermal Needle Probe Procedure ASTM D 5334 - 00**

Borehole Number: BH9
Sample No: -
Depth (m) 2.00

Description:
Firm brown and dark grey slightly organic CLAY

Sample preparation: Sample compacted using 2.5kg hammer method in 3 layers
according to procedures detailed in BS1377 : Part 4 :
Clause 3.3 : 1990, to produce a cylindrical specimen

Sample diameter: 101.2 mm

Sample length: 202.2 mm

Bulk Density 1.61 Mg/m³

Dry Density 1.00 Mg/m³

Moisture Content 60 %

Thermal Conductivity **0.782** W/(m.k)

Remarks:

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Initials:
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Project Name:

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Project Number 51603-00**

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PROJECT NAME	TOTTENHAM MARSH	Date	14/06/2013
	Project Number 51603-00	Approved	<i>Simon Burke</i>
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Sample details				Description	Classification Tests					Density Tests		Undrained Triaxial Compression Tests			Chemical Tests			Other tests and comments
Borehole No.	Depth (m)	No.	Type		MC (%)	LL (%)	PL (%)	PI (%)	<425 mic (%)	Bulk (Mg/m³)	Dry (Mg/m³)	Cell Pressure (kPa)	Deviator Stress (kPa)	Shear Stress (kPa)	pH	2:1 W/S SO4 (g/l)	Ground Water SO4 (g/l)	
BH8	2.00	-	B	Firm brown slightly organic silty CLAY with rare coarse sand and fine gravel														Thermal Resistivity
BH9	2.00	-	B	Firm brown and dark grey CLAY														Thermal Resistivity
BH2	2.00	-	B	Firm brown dark grey gravelly CLAY	17													Unsuitable for Thermal Resistivity due to high gravel content
BH8	2.20 - 2.65	U1	U	Soft brownish grey organic silty CLAY	84					1.52	0.82	25 50 100	43 47 48	23				Hand Vane = 24, 26, 24 kPa
BH8	7.40 - 7.85	U2	U	Stiff fissured grey silty CLAY	30					1.97	1.52	75 150 300	264 264 207	123				Hand Vane = 175, 172, 172 kPa
BH8	8.90 - 9.35	U3	U	Very stiff fissured grey silty CLAY	24					2.03	1.64	90 180 360	366 401 266	172				Insufficient sample for Hand vane
BH8	10.40 - 10.85	U4	U	Stiff fissured grey silty CLAY	31					1.96	1.50	105 210 420	260 207 287	126				Insufficient sample for Hand vane
BH8	11.90 - 12.35	U5	U	Stiff fissured grey silty CLAY with rare fine gravel	26					1.99	1.58	120 240 480	339 258 423	170				Hand Vane = > 188 kPa
BH8	12.90 - 13.35	U6	U	Very stiff fissured grey silty CLAY	23					2.05	1.68	130 260 520	457 472 661	265				Hand Vane = > 188 kPa
BH8	14.40 - 14.75	U7	U	Very stiff fissured grey silty CLAY	22					2.02	1.66	145 290 580	640 636 679	326				Insufficient sample for Hand vane
BH9	1.30 - 1.75	U1	U	Firm brown silty CLAY with occasional coarse sand	39					1.77	1.27	20 30 60	105 101 94	50				Hand Vane = 81, 81, 78 kPa
BH9	2.30 - 2.75	U2	U	Soft grey slightly organic silty CLAY	73					1.52	0.88	25 50 100	56 63 54	29				Hand Vane = 38, 26, 38 kPa

SUMMARY OF GEOTECHNICAL TESTING



Test Report by GEOLABS Limited Bucknalls Lane, Garston, Watford, Hertfordshire, WD25 9XX

Authorised Signatories: ☐ J R Masters (Qual Mgr) ☐ C F Wallace (Tech Mgr) ☐ J Sturges (Ops Mgr) [X] Simon Burke (Snr Tech) ☐ J J M Powell (Tech Dir)

Client: Worley Parsons, 27 Great West Road, Brentford, Middlesex TW8 9BW

(Ref5439.396713)

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PROJECT NAME PROJECT NO:	TOTTENHAM MARSH Project Number 51603-00 GEO / 19780	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Date</td> <td>14/06/2013</td> </tr> <tr> <td>Approved</td> <td><i>Simon Burke</i></td> </tr> <tr> <td>Page</td> <td>2 of 2</td> </tr> </table>	Date	14/06/2013	Approved	<i>Simon Burke</i>	Page	2 of 2
Date	14/06/2013							
Approved	<i>Simon Burke</i>							
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Sample details				Description	Classification Tests					Density Tests		Undrained Triaxial Compression Tests			Chemical Tests			Other tests and comments
Borehole	Depth	No.	Type		MC	LL	PL	PI	<425 mic	Bulk	Dry	Cell Pressure	Deviator Stress	Shear Stress	pH	2:1 W/S SO4	Ground Water SO4	
No.	(m)				(%)	(%)	(%)	(%)	(%)	(Mg/m³)	(Mg/m³)	(kPa)	(kPa)	(kPa)		(g/l)	(g/l)	
BH9	6.30 - 6.75	U3	U	Firm grey silty CLAY with rare sand and fine gravel	32					1.92	1.45	65 130 260	105 118 127	58				Insufficient sample for Hand vane
BH2	7.00 - 7.45	U3	U	Firm grey silty CLAY with occasional sand and fine to medium gravel	19					2.04	1.72	70 140 280	120 138 149	68				Hand Vane = 121, 121, 121 kPa
BH2	8.90 - 9.35	U4	U	Stiff fissured grey silty CLAY	27					1.97	1.55	90 180 360	278 199 369	141				Hand Vane = 151, 148, 153 kPa
BH2	11.00 - 11.45	U5	U	Very stiff fissured grey silty CLAY	24					2.02	1.63	110 220 440	425 411 383	203				Insufficient sample for Hand vane
BH10	7.70 - 8.15	-	U	Stiff fissured grey silty CLAY	26					2.01	1.59	80 160 320	246 286 331	144				Hand Vane = > 188 kPa
BH10	9.60 - 10.05	-	U	Stiff fissured grey silty CLAY with rare fine to medium gravel	27					1.99	1.57	95 190 380	276 279 279	139				Hand Vane = 159, 159, 161 kPa
BH11	2.20 - 2.65	-	U	Soft dark grey slightly organic sandy CLAY	39					1.76	1.27	20 40 80	66 58 52	29				Hand Vane = 71, 73, 73 kPa
BH11	3.20 - 3.65	-	U	Soft black very well converted clayey PEAT	136					1.33	0.57	35 70 140	42 52 45	23				Hand Vane = 44, 39, 43 kPa

SUMMARY OF GEOTECHNICAL TESTING

Quick Undrained Triaxial Compression Test

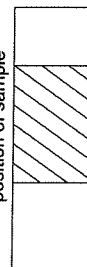
Borehole Number: BH8
 Sample Number: U1
 Depth (m): 2.20 - 2.65

Description:
 Soft brownish grey organic silty CLAY

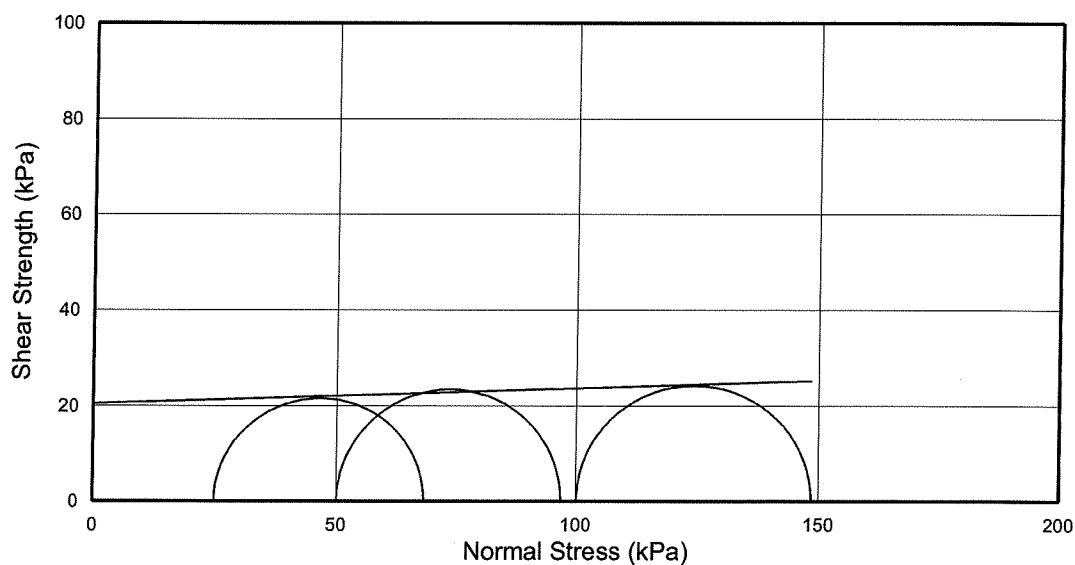
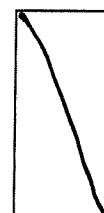
Set of 3 Specimens

Specimen details	Specimen 1	Specimen 2	Specimen 3
Specimen conditions:	Undisturbed	Undisturbed	Undisturbed
Length (mm):	75.3	75.6	75.4
Diameter (mm):	37.9	37.3	37.8
Moisture Content (%):	84	86	83
Bulk Density (Mg/m ³):	1.51	1.54	1.50
Dry Density (Mg/m ³):	0.82	0.83	0.82
Test details	Specimen 1	Specimen 2	Specimen 3
Latex membrane thickness (mm):	0.3	0.3	0.3
Membrane correction (kPa):	1.9	2.5	1.4
Axial displacement rate (%/min):	2.0	2.0	2.0
Cell pressure (kPa):	25	50	100
Strain at failure (%):	10.6	15.2	7.3
Maximum Deviator Stress (kPa):	43	47	48
Shear Stress τ_c (kPa):	22	23	24

Orientation and
position of sample



Mode of failure:



$$c = 20 \text{ kPa} \quad \phi = 2^\circ$$

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Initials:

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Project Name:

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Quick Undrained Triaxial Compression Test

Borehole Number: BH8
 Sample Number: U2
 Depth (m): 7.40 - 7.85

Description:
 Stiff fissured grey silty CLAY

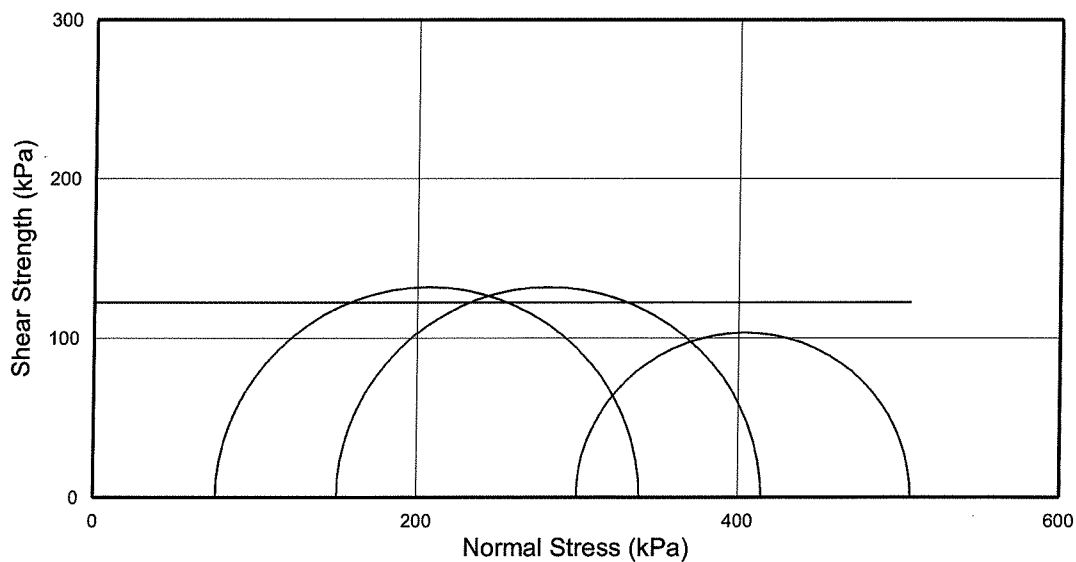
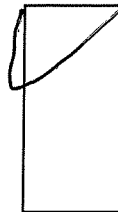
Set of 3 Specimens

Specimen details	Specimen 1	Specimen 2	Specimen 3
Specimen conditions:	Undisturbed	Undisturbed	Undisturbed
Length (mm):	75.6	76.0	75.4
Diameter (mm):	37.8	37.8	37.9
Moisture Content (%):	30	29	30
Bulk Density (Mg/m ³):	1.99	1.95	1.98
Dry Density (Mg/m ³):	1.53	1.51	1.53
Test details	Specimen 1	Specimen 2	Specimen 3
Latex membrane thickness (mm):	0.3	0.3	0.3
Membrane correction (kPa):	1.2	1.9	1.9
Axial displacement rate (%/min):	2.0	2.0	2.0
Cell pressure (kPa):	75	150	300
Strain at failure (%):	6.0	11.2	10.6
Maximum Deviator Stress (kPa):	264	264	207
Shear Stress τ_c (kPa):	132	132	104

Orientation and
position of sample



Mode of failure:



$$c = 123 \text{ kPa} \quad \phi = 0^\circ$$

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TOTTENHAM MARSH

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Quick Undrained Triaxial Compression Test

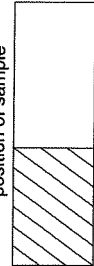
Borehole Number: BH8
 Sample Number: U3
 Depth (m): 8.90 - 9.35

Description:
 Very stiff fissured grey silty CLAY

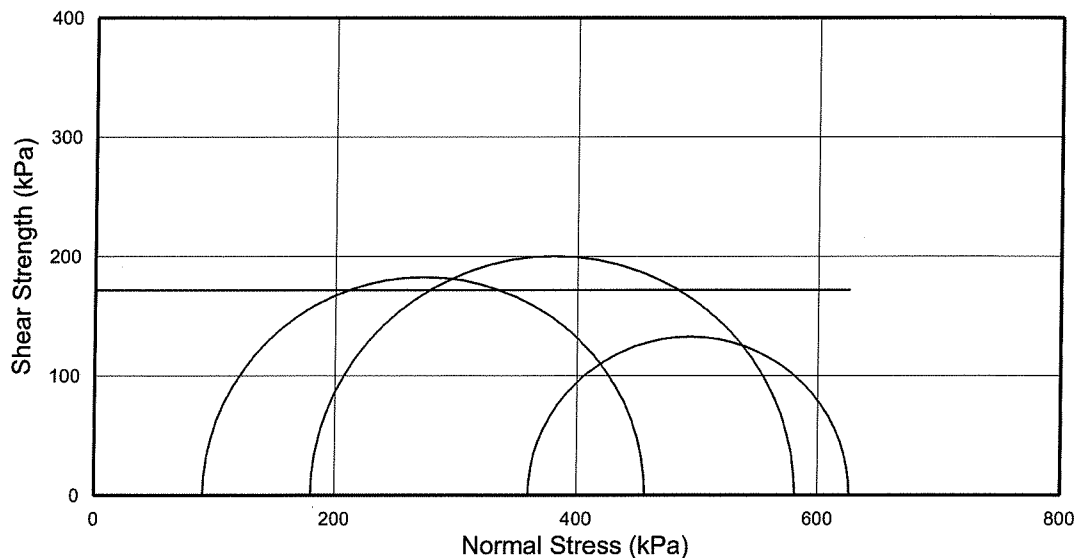
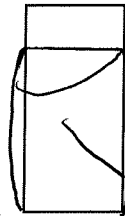
Set of 3 Specimens

Specimen details	Specimen 1	Specimen 2	Specimen 3
Specimen conditions:	Undisturbed	Undisturbed	Undisturbed
Length (mm):	75.5	75.7	75.5
Diameter (mm):	37.7	37.7	38.0
Moisture Content (%):	23	24	24
Bulk Density (Mg/m ³):	2.05	2.03	2.02
Dry Density (Mg/m ³):	1.66	1.63	1.63
Test details	Specimen 1	Specimen 2	Specimen 3
Latex membrane thickness (mm):	0.3	0.3	0.3
Membrane correction (kPa):	2.7	1.9	1.0
Axial displacement rate (%/min):	2.0	2.0	2.0
Cell pressure (kPa):	90	180	360
Strain at failure (%):	17.9	10.6	4.6
Maximum Deviator Stress (kPa):	366	401	266
Shear Stress τ_c (kPa):	183	200	133

Orientation and
position of sample



Mode of failure:



$$c = 172 \text{ kPa} \quad \phi = 0^\circ$$

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Quick Undrained Triaxial Compression Test

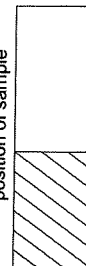
Borehole Number: BH8
 Sample Number: U4
 Depth (m): 10.40 - 10.85

Description:
 Stiff fissured grey silty CLAY

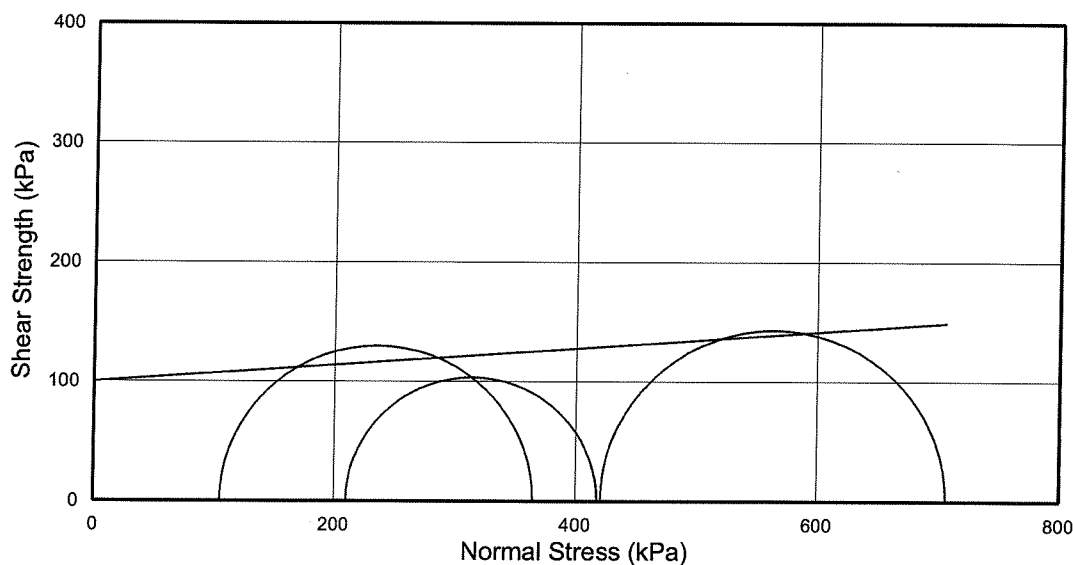
Set of 3 Specimens

Specimen details	Specimen 1	Specimen 2	Specimen 3
Specimen conditions:	Undisturbed	Undisturbed	Undisturbed
Length (mm):	75.7	75.5	75.8
Diameter (mm):	37.7	37.5	37.9
Moisture Content (%):	31	31	30
Bulk Density (Mg/m ³):	1.96	1.98	1.93
Dry Density (Mg/m ³):	1.50	1.51	1.49
Test details	Specimen 1	Specimen 2	Specimen 3
Latex membrane thickness (mm):	0.3	0.3	0.3
Membrane correction (kPa):	1.0	0.8	1.9
Axial displacement rate (%/min):	2.0	2.0	2.0
Cell pressure (kPa):	105	210	420
Strain at failure (%):	4.6	3.7	11.2
Maximum Deviator Stress (kPa):	260	207	287
Shear Stress τ_c (kPa):	130	104	143

Orientation and
position of sample



Mode of failure:



$$c = 100 \text{ kPa} \quad \phi = 4^\circ$$

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Quick Undrained Triaxial Compression Test

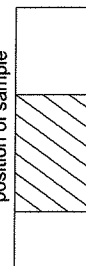
Borehole Number: BH8
 Sample Number: U5
 Depth (m): 11.90 - 12.35

Description:
 Stiff fissured grey silty CLAY with
 rare fine gravel

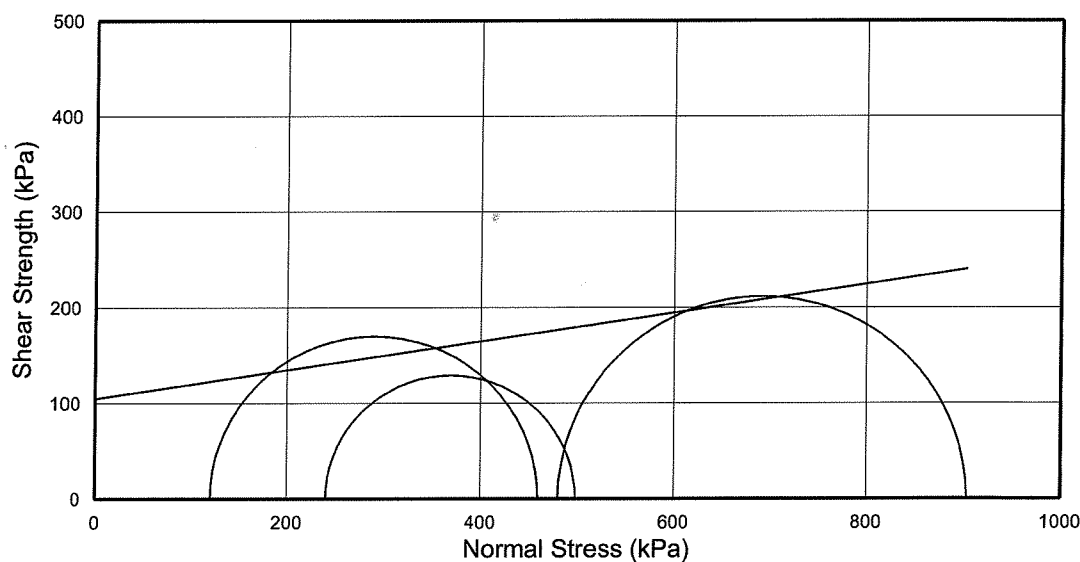
Set of 3 Specimens

Specimen details	Specimen 1	Specimen 2	Specimen 3
Specimen conditions:	Undisturbed	Undisturbed	Undisturbed
Length (mm):	75.7	76.3	75.9
Diameter (mm):	37.9	37.9	37.0
Moisture Content (%):	26	27	26
Bulk Density (Mg/m ³):	1.97	1.98	2.02
Dry Density (Mg/m ³):	1.56	1.56	1.61
Test details	Specimen 1	Specimen 2	Specimen 3
Latex membrane thickness (mm):	0.3	0.3	0.3
Membrane correction (kPa):	1.4	3.0	1.9
Axial displacement rate (%/min):	2.0	2.0	2.0
Cell pressure (kPa):	120	240	480
Strain at failure (%):	7.3	19.7	10.5
Maximum Deviator Stress (kPa):	339	258	423
Shear Stress τ_c (kPa):	170	129	212

Orientation and
position of sample



Mode of failure:



$$c = 104 \text{ kPa} \quad \phi = 8.5^\circ$$

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Quick Undrained Triaxial Compression Test

Borehole Number: BH8
 Sample Number: U6
 Depth (m): 12.90 - 13.35

Description:
 Very stiff fissured grey silty CLAY

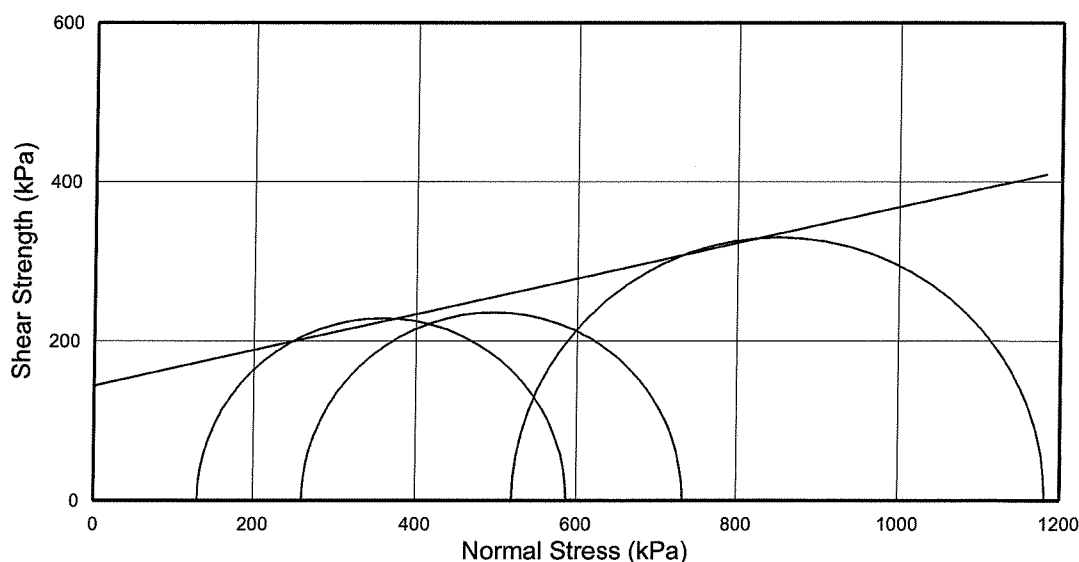
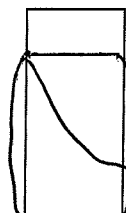
Set of 3 Specimens

Specimen details	Specimen 1	Specimen 2	Specimen 3
Specimen conditions:	Undisturbed	Undisturbed	Undisturbed
Length (mm):	75.9	75.8	75.4
Diameter (mm):	37.9	38.1	37.9
Moisture Content (%):	23	22	23
Bulk Density (Mg/m ³):	2.05	2.05	2.06
Dry Density (Mg/m ³):	1.67	1.69	1.67
Test details	Specimen 1	Specimen 2	Specimen 3
Latex membrane thickness (mm):	0.3	0.3	0.3
Membrane correction (kPa):	1.7	2.8	1.6
Axial displacement rate (%/min):	2.0	2.0	2.0
Cell pressure (kPa):	130	260	520
Strain at failure (%):	9.2	18.5	8.6
Maximum Deviator Stress (kPa):	457	472	661
Shear Stress τ_c (kPa):	229	236	331

Orientation and
position of sample



Mode of failure:



$$c = 144 \text{ kPa} \quad \phi = 12.5^\circ$$

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Quick Undrained Triaxial Compression Test

Borehole Number: BH8
 Sample Number: U7
 Depth (m): 14.40 - 14.75

Description:
 Very stiff fissured grey silty CLAY

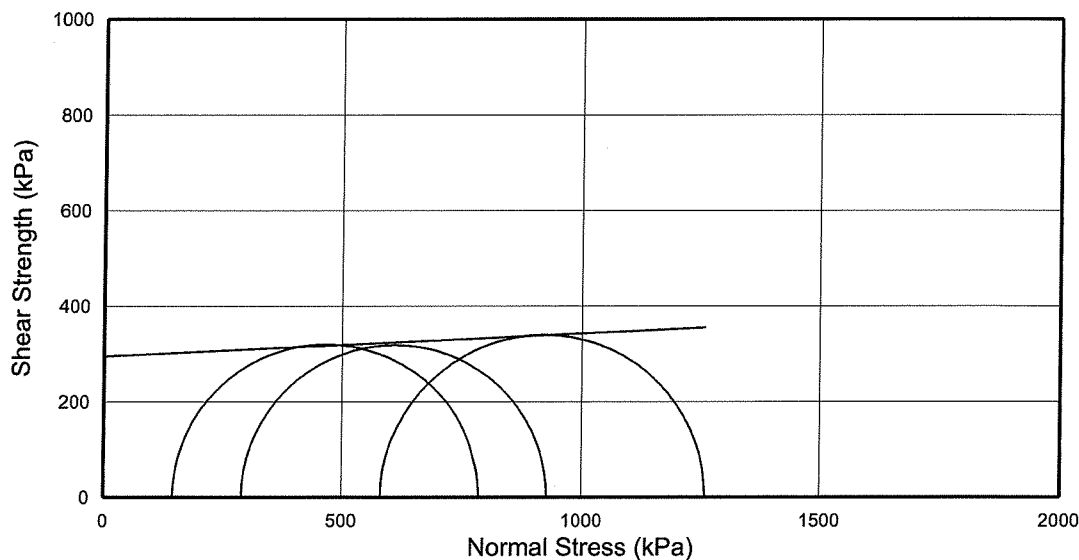
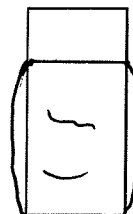
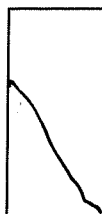
Set of 3 Specimens

Specimen details	Specimen 1	Specimen 2	Specimen 3
Specimen conditions:	Undisturbed	Undisturbed	Undisturbed
Length (mm):	76.5	75.8	77.1
Diameter (mm):	37.9	38.0	38.2
Moisture Content (%):	22	21	22
Bulk Density (Mg/m ³):	2.06	2.06	1.95
Dry Density (Mg/m ³):	1.69	1.70	1.60
Test details	Specimen 1	Specimen 2	Specimen 3
Latex membrane thickness (mm):	0.3	0.3	0.3
Membrane correction (kPa):	1.5	1.8	3.0
Axial displacement rate (%/min):	2.0	2.0	2.0
Cell pressure (kPa):	145	290	580
Strain at failure (%):	7.8	9.9	20.1
Maximum Deviator Stress (kPa):	640	636	679
Shear Stress τ_c (kPa):	320	318	340

Orientation and
position of sample



Mode of failure:



$$c = 294 \text{ kPa} \quad \phi = 2.5^\circ$$

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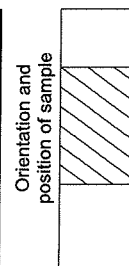
BS1377 : Part 7 : Clause 8 : 1990
Quick Undrained Triaxial Compression Test

Borehole Number: BH9
 Sample Number: U1
 Depth (m): 1.30 - 1.75

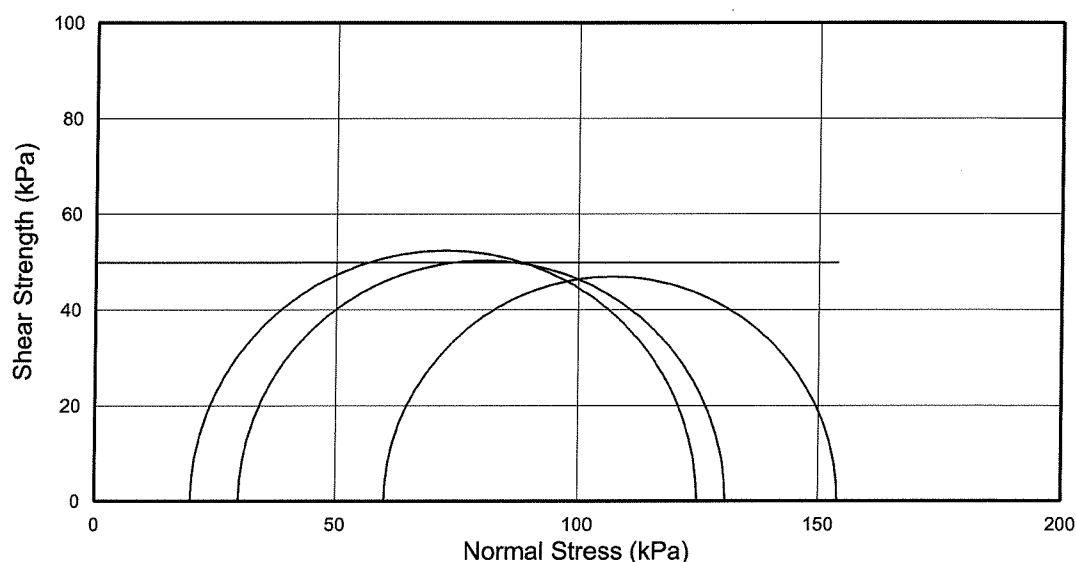
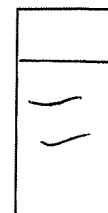
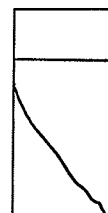
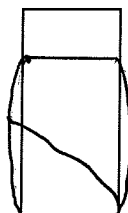
Description:
 Firm brown silty CLAY with
 occasional coarse sand

Set of 3 Specimens

Specimen details	Specimen 1	Specimen 2	Specimen 3
Specimen conditions:	Undisturbed	Undisturbed	Undisturbed
Length (mm):	75.9	76.5	75.8
Diameter (mm):	37.4	37.3	37.8
Moisture Content (%):	40	39	38
Bulk Density (Mg/m ³):	1.81	1.79	1.71
Dry Density (Mg/m ³):	1.29	1.29	1.24
Test details	Specimen 1	Specimen 2	Specimen 3
Latex membrane thickness (mm):	0.3	0.3	0.3
Membrane correction (kPa):	3.1	2.9	2.8
Axial displacement rate (%/min):	2.0	2.0	2.0
Cell pressure (kPa):	20	30	60
Strain at failure (%):	20.4	19.0	18.5
Maximum Deviator Stress (kPa):	105	101	94
Shear Stress τ_c (kPa):	52	50	47



Mode of failure:



$c = 50 \text{ kPa} \quad \phi = 0^\circ$

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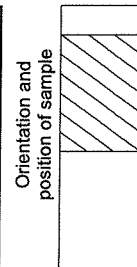
Quick Undrained Triaxial Compression Test

Borehole Number: BH9
 Sample Number: U2
 Depth (m): 2.30 - 2.75

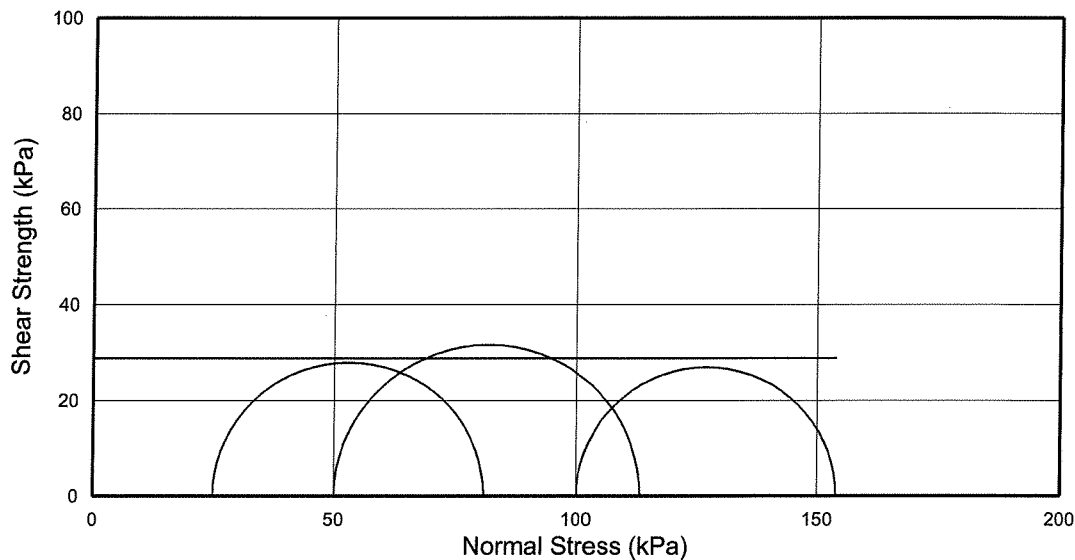
Description:
 Soft grey slightly organic silty CLAY

Set of 3 Specimens

Specimen details	Specimen 1	Specimen 2	Specimen 3
Specimen conditions:	Undisturbed	Undisturbed	Undisturbed
Length (mm):	75.7	75.8	75.7
Diameter (mm):	37.2	38.0	37.7
Moisture Content (%):	71	78	69
Bulk Density (Mg/m ³):	1.54	1.52	1.51
Dry Density (Mg/m ³):	0.90	0.85	0.89
Test details	Specimen 1	Specimen 2	Specimen 3
Latex membrane thickness (mm):	0.3	0.3	0.3
Membrane correction (kPa):	1.9	2.1	1.9
Axial displacement rate (%/min):	2.0	2.0	2.0
Cell pressure (kPa):	25	50	100
Strain at failure (%):	10.6	12.5	10.6
Maximum Deviator Stress (kPa):	56	63	54
Shear Stress τ_c (kPa):	28	32	27



Mode of failure:



$$c = 29 \text{ kPa} \quad \phi = 0^\circ$$

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Date: 14/06/2013

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Project Name:

TOTTENHAM MARSH

Project Number 51603-00



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Quick Undrained Triaxial Compression Test

Borehole Number: BH9
 Sample Number: U3
 Depth (m): 6.30 - 6.75

Description:
 Firm grey silty CLAY with rare
 sand and fine gravel

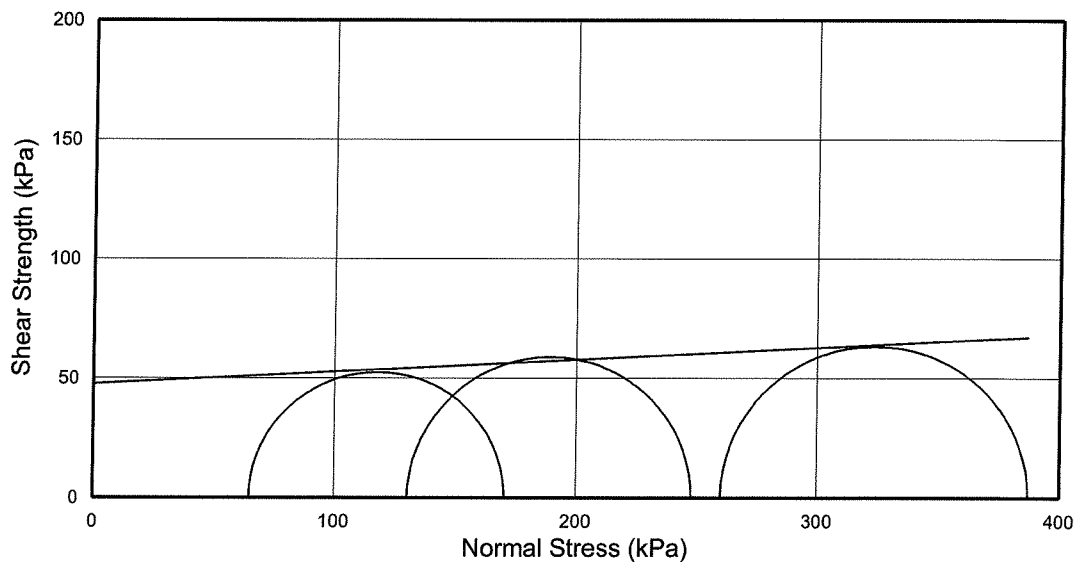
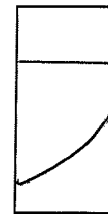
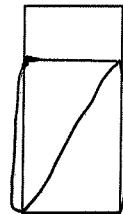
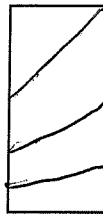
Set of 3 Specimens

Specimen details	Specimen 1	Specimen 2	Specimen 3
Specimen conditions:	Undisturbed	Undisturbed	Undisturbed
Length (mm):	75.4	75.2	75.8
Diameter (mm):	37.9	37.7	37.8
Moisture Content (%):	30	34	33
Bulk Density (Mg/m ³):	1.92	1.93	1.90
Dry Density (Mg/m ³):	1.48	1.44	1.43
Test details	Specimen 1	Specimen 2	Specimen 3
Latex membrane thickness (mm):	0.3	0.3	0.3
Membrane correction (kPa):	2.3	2.8	3.1
Axial displacement rate (%/min):	2.0	2.0	2.0
Cell pressure (kPa):	65	130	260
Strain at failure (%):	13.9	18.0	20.4
Maximum Deviator Stress (kPa):	105	118	127
Shear Stress c_u (kPa):	53	59	63

Orientation and
position of sample



Mode of failure:



$$c = 48 \text{ kPa} \quad \phi = 3^\circ$$

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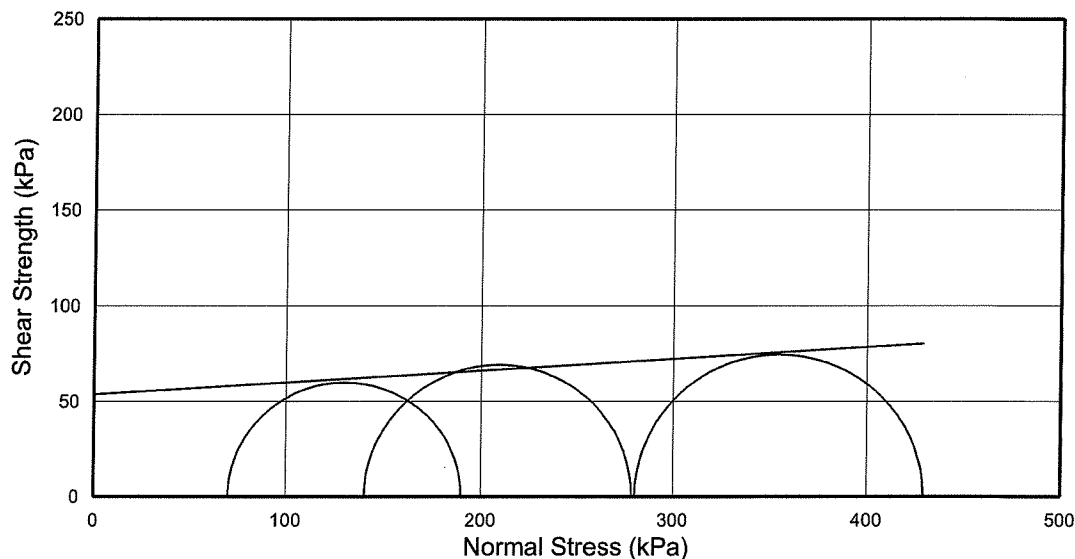
Quick Undrained Triaxial Compression Test

Borehole Number: BH2
 Sample Number: U3
 Depth (m): 7.00 - 7.45

Description:
 Firm grey silty CLAY with occasional
 sand and fine to medium gravel

3 Stage Specimen

Specimen details	Single Specimen		
Specimen conditions:	Undisturbed		
Length (mm):	203.2		
Diameter (mm):	102.8		
Moisture Content (%):	19		
Bulk Density (Mg/m ³):	2.04		
Dry Density (Mg/m ³):	1.72		
Test details	Stage 1	Stage 2	Stage 3
Latex membrane thickness (mm):	0.3	0.3	0.3
Membrane correction (kPa):	0.3	0.6	0.9
Axial displacement rate (%/min):	2.0	2.0	2.0
Cell pressure (kPa):	70	140	280
Strain at failure (%):	4.4	7.9	16.2
Maximum Deviator Stress (kPa):	120	138	149
Shear Stress τ_c (kPa):	60	69	75
Mode of failure:			



$$c = 54 \text{ kPa} \quad \phi = 3.5^\circ$$

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Quick Undrained Triaxial Compression Test

Borehole Number: BH2
 Sample Number: U4
 Depth (m): 8.90 - 9.35

Description:
 Stiff fissured grey silty CLAY

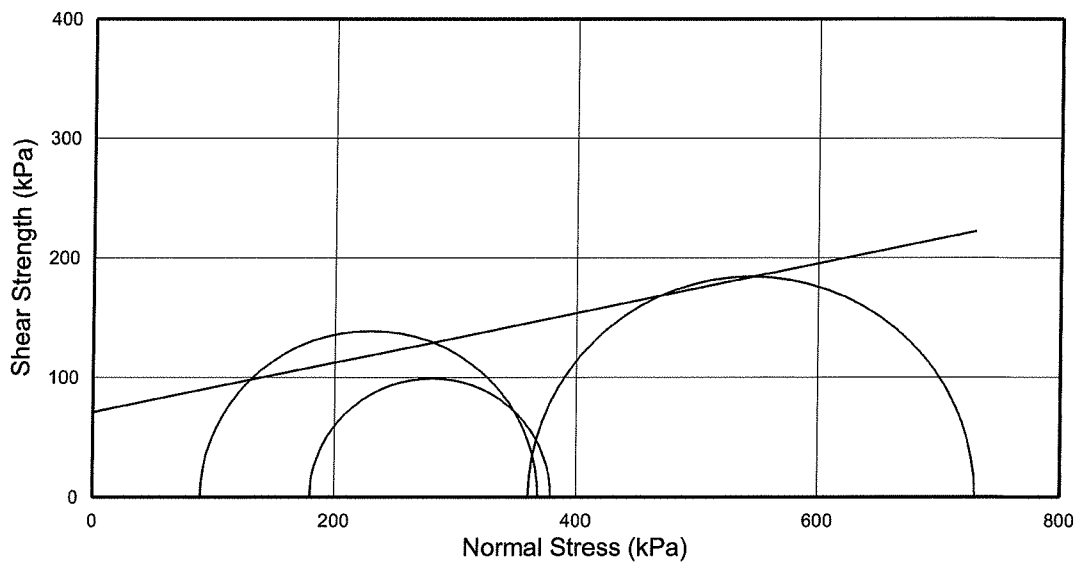
Set of 3 Specimens

Specimen details	Specimen 1	Specimen 2	Specimen 3
Specimen conditions:	Undisturbed	Undisturbed	Undisturbed
Length (mm):	75.4	76.9	75.5
Diameter (mm):	38.0	37.9	37.8
Moisture Content (%):	29	27	26
Bulk Density (Mg/m ³):	1.99	1.93	1.98
Dry Density (Mg/m ³):	1.54	1.53	1.57
Test details	Specimen 1	Specimen 2	Specimen 3
Latex membrane thickness (mm):	0.3	0.3	0.3
Membrane correction (kPa):	1.3	3.0	1.9
Axial displacement rate (%/min):	2.0	2.0	2.0
Cell pressure (kPa):	90	180	360
Strain at failure (%):	6.6	20.1	10.6
Maximum Deviator Stress (kPa):	278	199	369
Shear Stress τ_c (kPa):	139	99	185

Orientation and
position of sample



Mode of failure:



$$c = 71 \text{ kPa} \quad \phi = 11.5^\circ$$

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Quick Undrained Triaxial Compression Test

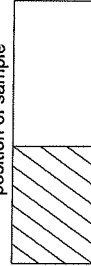
Borehole Number: BH2
 Sample Number: U5
 Depth (m): 11.00 - 11.45

Description:
 Very stiff fissured grey silty CLAY

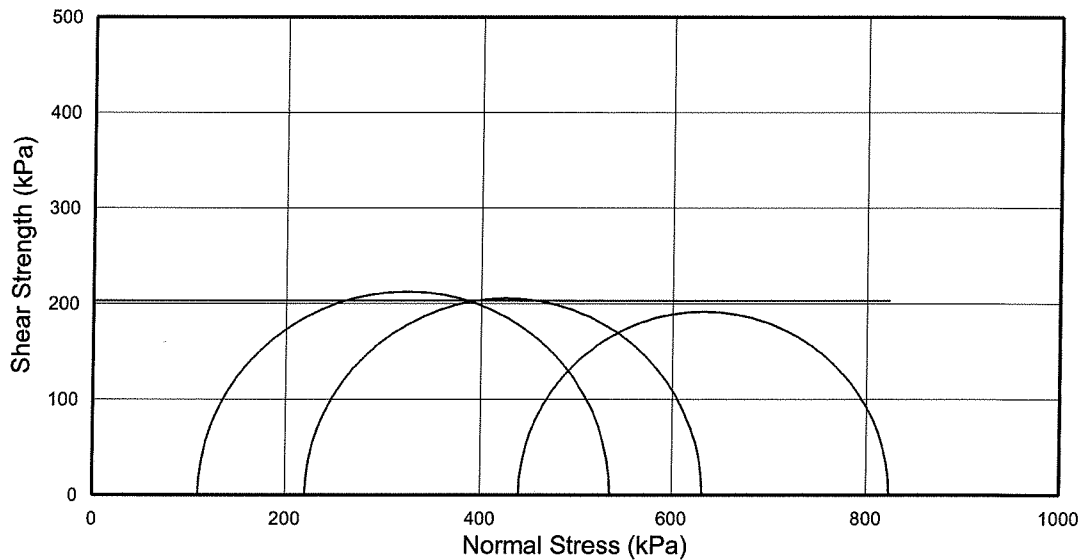
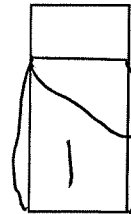
Set of 3 Specimens

Specimen details	Specimen 1	Specimen 2	Specimen 3
Specimen conditions:	Undisturbed	Undisturbed	Undisturbed
Length (mm):	76.3	77.2	75.8
Diameter (mm):	37.8	38.1	38.0
Moisture Content (%):	23	26	24
Bulk Density (Mg/m ³):	2.03	2.02	2.02
Dry Density (Mg/m ³):	1.65	1.60	1.63
Test details	Specimen 1	Specimen 2	Specimen 3
Latex membrane thickness (mm):	0.3	0.3	0.3
Membrane correction (kPa):	1.6	3.0	3.1
Axial displacement rate (%/min):	2.0	2.0	2.0
Cell pressure (kPa):	110	220	440
Strain at failure (%):	8.5	20.1	20.4
Maximum Deviator Stress (kPa):	425	411	383
Shear Stress τ_c (kPa):	213	206	192

Orientation and
position of sample



Mode of failure:



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Quick Undrained Triaxial Compression Test

Borehole Number: BH10
 Sample Number: -
 Depth (m): 7.70 - 8.15

Description:
 Stiff fissured grey silty CLAY

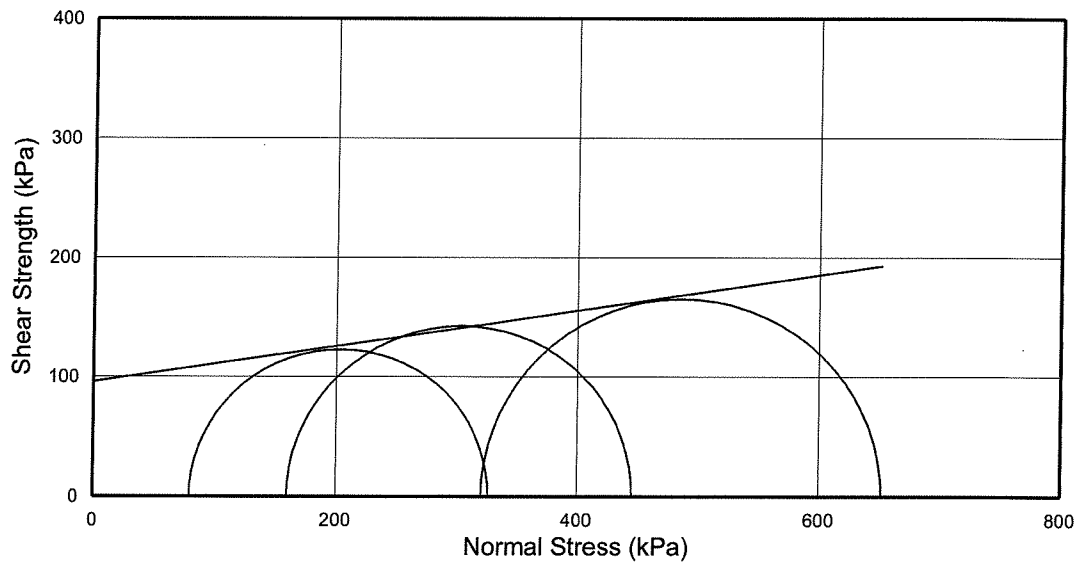
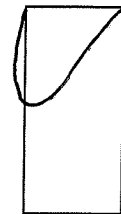
Set of 3 Specimens

Specimen details	Specimen 1	Specimen 2	Specimen 3
Specimen conditions:	Undisturbed	Undisturbed	Undisturbed
Length (mm):	75.6	75.7	75.8
Diameter (mm):	37.9	37.9	37.8
Moisture Content (%):	26	27	25
Bulk Density (Mg/m ³):	2.00	2.00	2.03
Dry Density (Mg/m ³):	1.59	1.57	1.62
Test details	Specimen 1	Specimen 2	Specimen 3
Latex membrane thickness (mm):	0.3	0.3	0.3
Membrane correction (kPa):	1.2	1.8	2.6
Axial displacement rate (%/min):	2.0	2.0	2.0
Cell pressure (kPa):	80	160	320
Strain at failure (%):	6.0	9.9	16.5
Maximum Deviator Stress (kPa):	246	286	331
Shear Stress c_u (kPa):	123	143	165

Orientation and
position of sample



Mode of failure:



$$c = 96 \text{ kPa} \quad \phi = 8.5^\circ$$

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Quick Undrained Triaxial Compression Test

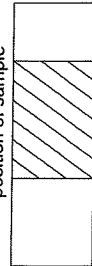
Borehole Number: BH10
 Sample Number: -
 Depth (m): 9.60 - 10.05

Description:
 Stiff fissured grey silty CLAY with
 rare fine to medium gravel

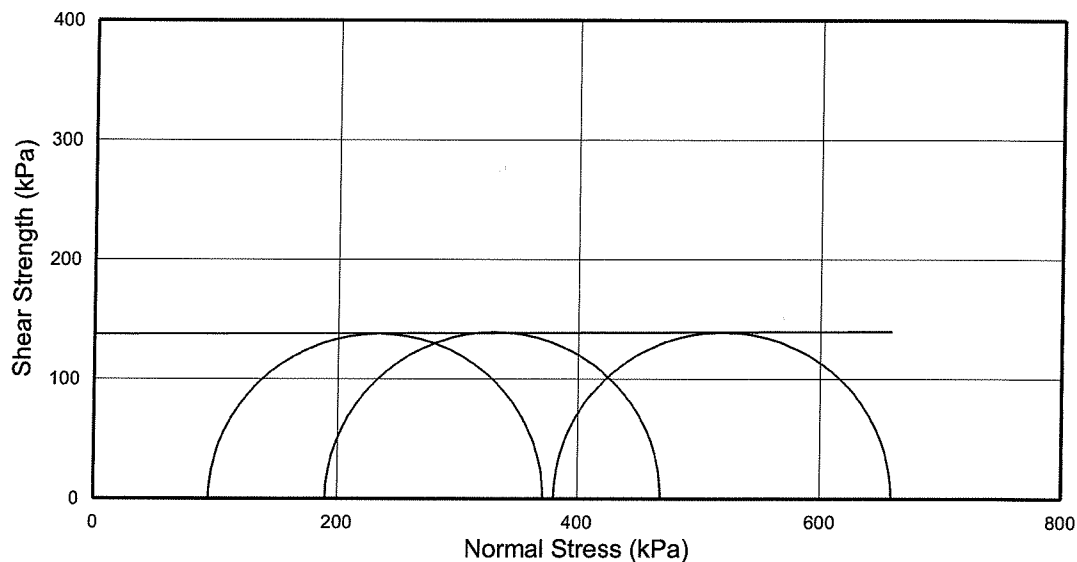
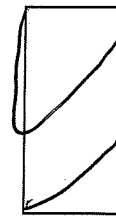
Set of 3 Specimens

Specimen details	Specimen 1	Specimen 2	Specimen 3
Specimen conditions:	Undisturbed	Undisturbed	Undisturbed
Length (mm):	75.7	75.8	75.8
Diameter (mm):	37.5	38.0	37.8
Moisture Content (%):	28	26	28
Bulk Density (Mg/m ³):	2.01	1.99	1.97
Dry Density (Mg/m ³):	1.57	1.58	1.54
Test details	Specimen 1	Specimen 2	Specimen 3
Latex membrane thickness (mm):	0.3	0.3	0.3
Membrane correction (kPa):	1.9	3.1	2.0
Axial displacement rate (%/min):	2.0	2.0	2.0
Cell pressure (kPa):	95	190	380
Strain at failure (%):	10.6	20.4	11.2
Maximum Deviator Stress (kPa):	276	279	279
Shear Stress c_u (kPa):	138	140	139

Orientation and
position of sample



Mode of failure:



$$c = 138 \text{ kPa} \quad \phi = 0^\circ$$

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Quick Undrained Triaxial Compression Test

Borehole Number: BH11
 Sample Number: -
 Depth (m): 2.20 - 2.65

Description:
 Soft dark grey slightly organic sandy CLAY

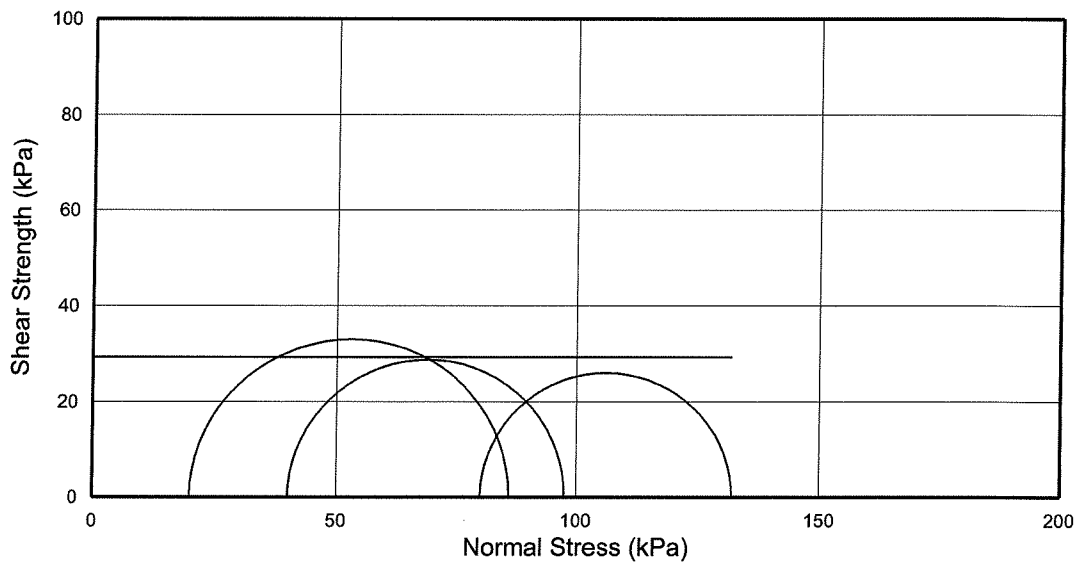
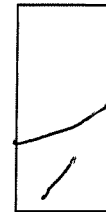
Set of 3 Specimens

Specimen details	Specimen 1	Specimen 2	Specimen 3
Specimen conditions:	Undisturbed	Undisturbed	Undisturbed
Length (mm):	75.7	77.2	77.2
Diameter (mm):	37.7	37.6	37.5
Moisture Content (%):	38	40	39
Bulk Density (Mg/m ³):	1.73	1.83	1.74
Dry Density (Mg/m ³):	1.25	1.30	1.25
Test details	Specimen 1	Specimen 2	Specimen 3
Latex membrane thickness (mm):	0.3	0.3	0.3
Membrane correction (kPa):	2.0	2.4	2.1
Axial displacement rate (%/min):	2.0	2.0	2.0
Cell pressure (kPa):	20	40	80
Strain at failure (%):	11.2	14.9	12.3
Maximum Deviator Stress (kPa):	66	58	52
Shear Stress τ_c (kPa):	33	29	26

Orientation and
position of sample



Mode of failure:



$$c = 29 \text{ kPa} \quad \phi = 0^\circ$$

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Project Number 51603-00



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Quick Undrained Triaxial Compression Test

Borehole Number: BH11
 Sample Number: -
 Depth (m): 3.20 - 3.65

Description:
 Soft black very well converted clayey PEAT

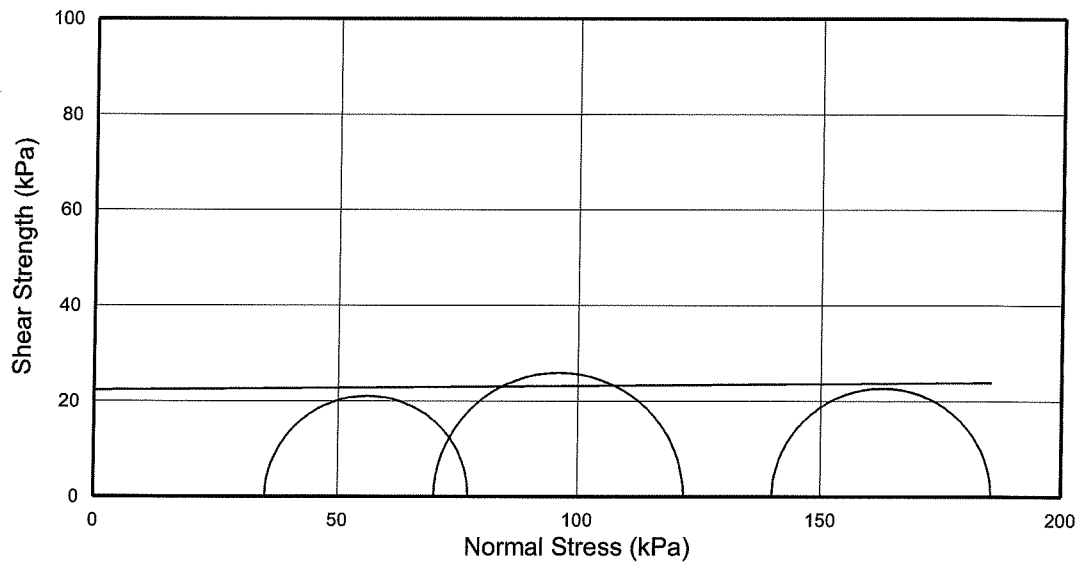
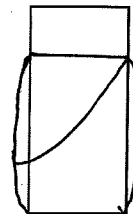
Set of 3 Specimens

Specimen details	Specimen 1	Specimen 2	Specimen 3
Specimen conditions:	Undisturbed	Undisturbed	Undisturbed
Length (mm):	75.7	75.7	75.6
Diameter (mm):	37.7	37.7	37.5
Moisture Content (%):	153	148	106
Bulk Density (Mg/m ³):	1.32	1.34	1.34
Dry Density (Mg/m ³):	0.52	0.54	0.65
Test details	Specimen 1	Specimen 2	Specimen 3
Latex membrane thickness (mm):	0.3	0.3	0.3
Membrane correction (kPa):	2.0	2.6	2.8
Axial displacement rate (%/min):	2.0	2.0	2.0
Cell pressure (kPa):	35	70	140
Strain at failure (%):	11.9	16.5	18.5
Maximum Deviator Stress (kPa):	42	52	45
Shear Stress c_u (kPa):	21	26	23

Orientation and
position of sample



Mode of failure:



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