



	SPECIMEN 1	SPECIMEN 2	SPECIMEN 3
Borehole	CY43	CY43	CY43
Sample	U18	U18	U18
Depth (m)	5.0	5.0	5.0

VISUAL DESCRIPTION
FIRM dark greyish brown mottled brown CLAY with fine chalk fragments and occasional fine gravel.

GENERAL			
Test method used *	L-T-104	L-T-104	L-T-104
Date test started	01/04/96	01/04/96	01/04/96
Type of sample	Undisturbed	Undisturbed	Undisturbed
Specimen orientation	Vertical	Vertical	Vertical
Type of drains fitted	Radial and one end	Radial and one end	Radial and one end

INITIAL			
Diameter (mm)	38.0	38.0	38.0
Length (mm)	75.6	75.6	75.6
Moisture content (%)	24	24	24
Bulk density (Mg/m ³)	2.03	2.04	2.02
Dry density (Mg/m ³)	1.63	1.64	1.62
Voids ratio	0.645	0.637	0.650
Degree of saturation (%)	100	100	100

SATURATION			
Saturation method used †	5.4	5.4	5.4
Pressure increments applied (kPa)	100	100	100
Differential pressure used (kPa)	N/A	N/A	N/A
Pore pressure on completion (kPa)	472	460	466
Cell pressure on completion (kPa)	500	500	500
B value achieved	0.98	0.97	0.97

* Tested in accordance with the following Fugro testing procedure
L-T-104 Isotropically consolidated undrained triaxial compression test

† Tested in accordance with the following clauses of BS 1377 : Part 8 : 1990	
5.3	Saturation by increments of cell and back pressure
5.4	Saturation at constant moisture content

SUMMARY OF
ISOTROPICALLY CONSOLIDATED UNDRAINED
TRIAXIAL COMPRESSION TEST : SET OF THREE SPECIMENS

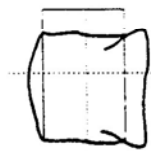




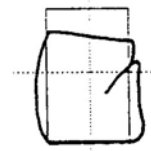
	SPECIMEN 1	SPECIMEN 2	SPECIMEN 3
Borehole	CY43	CY43	CY43
Sample	U18	U18	U18
Depth (m)	5.0	5.0	5.0

CONSOLIDATION : ISOTROPIC			
Cell pressure (kPa)	350	400	500
Back pressure (kPa)	300	300	300
Effective cell pressure (kPa)	50	100	200
Pore pressure on completion (kPa)	300	300	300
Pore pressure dissipation (%)	100	100	100
Moisture content (%)	24	23	21
Bulk density (Mg/m ³)	2.04	2.06	2.08
Dry density (Mg/m ³)	1.65	1.67	1.72
Voids ratio	0.623	0.604	0.559
Degree of saturation (%)	100	100	100
Cvi (m ² /year)	0.30	0.37	0.51
Mvi (m ² /MN)	0.50	0.32	0.33
Permeability (m/s)	4.59E-11	3.68E-11	5.24E-11

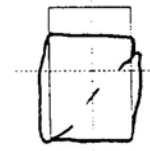
Mode of failure:



Specimen 1



Specimen 2



Specimen 3

SUMMARY OF
ISOTROPICALLY CONSOLIDATED UNDRAINED
TRIAXIAL COMPRESSION TEST : SET OF THREE SPECIMENS



TESTING
No. 0919



	SPECIMEN 1	SPECIMEN 2	SPECIMEN 3
Borehole	CY43	CY43	CY43
Sample	U18	U18	U18
Depth (m)	5.0	5.0	5.0

SHEARING			
Initial pore pressure (kPa)	299	300	300
Initial effective cell pressure (kPa)	51	100	200
Rate of strain (%/hour)	1.20	1.20	1.20
At peak deviator stress			
Corrected deviator stress (kPa)	86	121	185
Membrane correction applied (kPa)	4	3	3
Drain correction applied (kPa)	10	10	10
Axial strain (%)	18.34	10.47	10.36
Volumetric strain (%)	5.00	31.00	83.00
Major principal effective stress (kPa)	132	190	302
Minor principal effective stress (kPa)	46	69	117
Principal effective stress ratio	2.87	2.75	2.58
e 50 (%)	0.63	0.37	1.73
Secant modulus at e 50 (kPa)	6860	16100	5373
At peak principal effective stress ratio			
Corrected deviator stress (kPa)	67	112	181
Membrane correction applied (kPa)	4	3	3
Drain correction applied (kPa)	10	10	10
Axial strain (%)	3.87	4.83	7.83
Volumetric strain (%)	22.00	42.00	89.00
Major principal effective stress (kPa)	96	170	292
Minor principal effective stress (kPa)	29	58	111
Principal effective stress ratio	3.32	2.92	2.63
e 50 (%)	0.39	0.31	1.67
Secant modulus at e 50 (kPa)	8601	17983	5419

FINAL CONDITIONS			
Moisture content (%)	24	23	21
Bulk density (Mg/m ³)	2.04	2.06	2.08
Dry density (Mg/m ³)	1.65	1.67	1.72

**SUMMARY OF
ISOTROPICALLY CONSOLIDATED UNDRAINED
TRIAxIAL COMPRESSION TEST : SET OF THREE SPECIMENS**



TESTING

No. 0919

Filename: 018_104P.XLS

Approved by: MSD Date: 18-4-06

Template Issue: 1.1

Checked by: DGE Date: 18/4/06

Checked by: DGE

16/04/06

Drawn by: JKC

Date: 18/4/96

Drawn by: JKS

Template Issue: 1

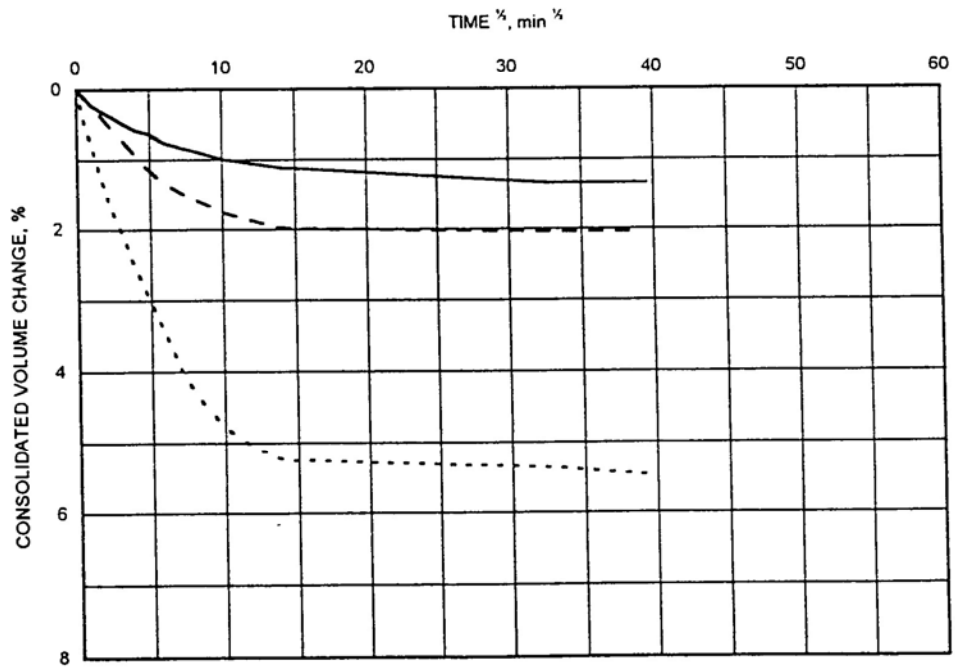
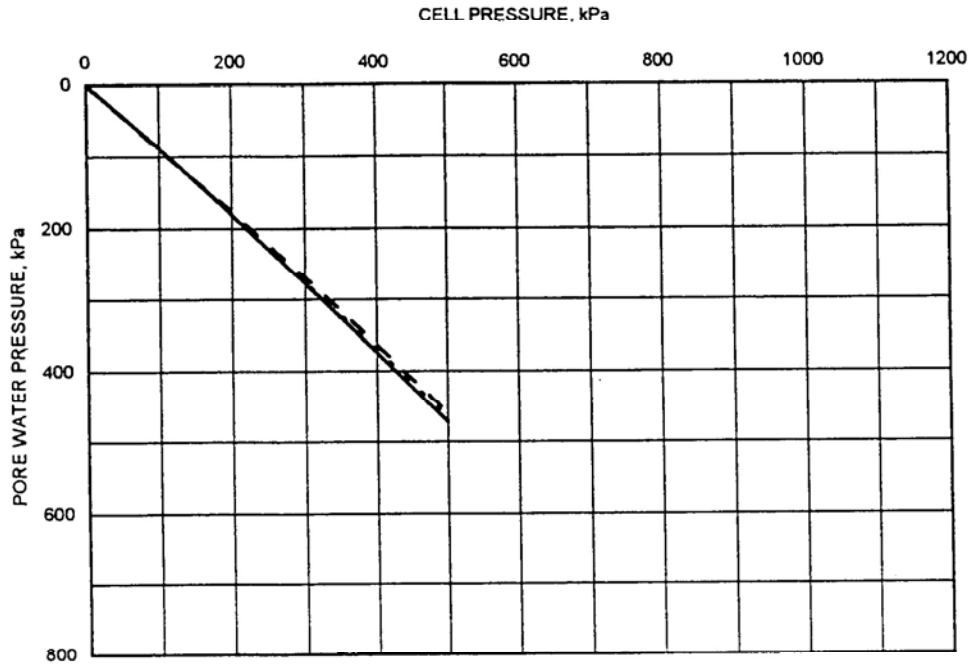
Filename: 018_104A.ORG

Date: 18/4/96

Date: 18.4.96

Checked by: DGC

Approved by: MSD



Specimen 1 —	σ_r' : 50kPa	σ_a' : 50kPa	Borehole: CY43	Sample: U18	Depth (m): 5.0
Specimen 2 - -	σ_r' : 100kPa	σ_a' : 100kPa	Borehole: CY43	Sample: U18	Depth (m): 5.0
Specimen 3 - - -	σ_r' : 200kPa	σ_a' : 200kPa	Borehole: CY43	Sample: U18	Depth (m): 5.0

ISOTROPICALLY CONSOLIDATED UNDRAINED
TRIAxIAL COMPRESSION TEST : SET OF THREE SPECIMENS



TESTING
No. 0919

Date: 18/4/96

Drawn by: JKS

Template Issue: 1

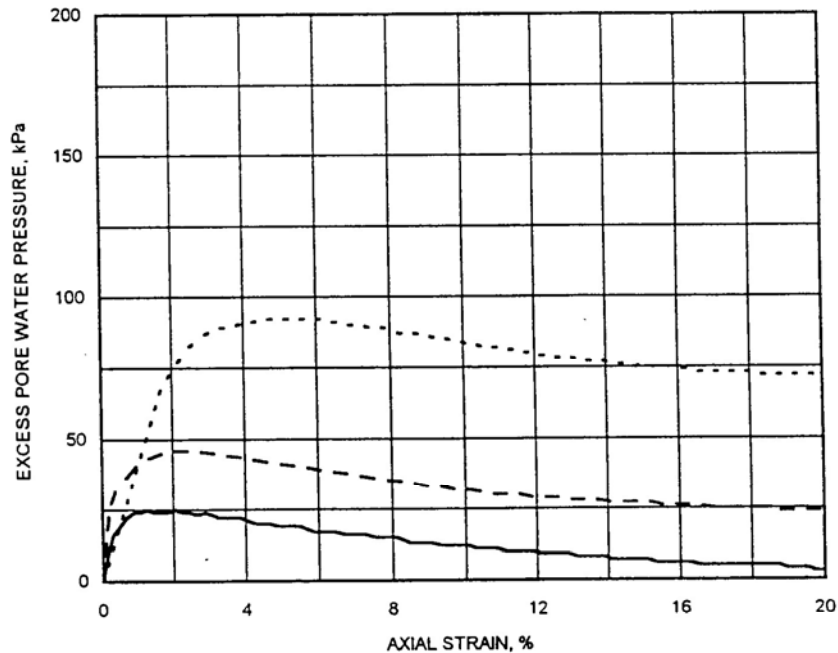
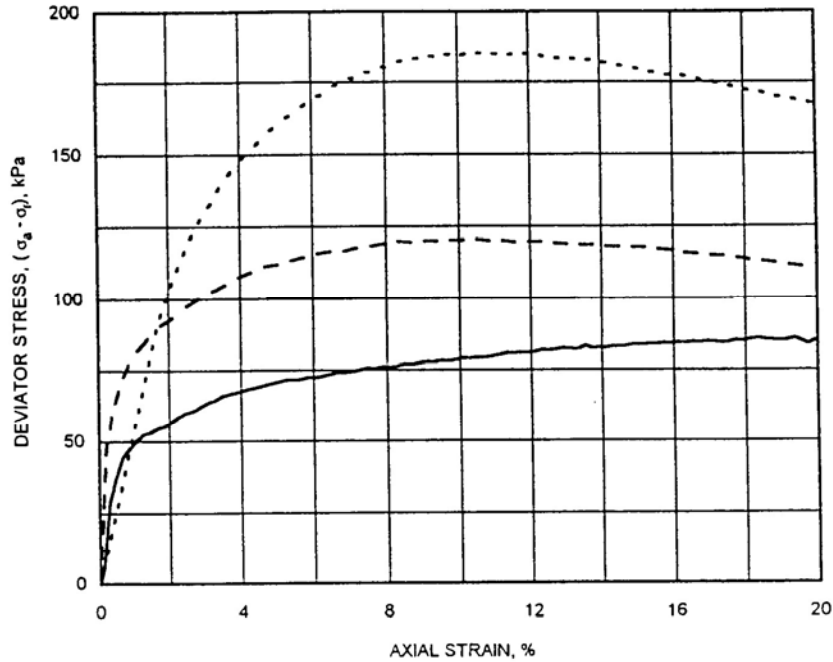
Filename: 018_1046.ORG

Date: 18/4/96

Date: 16-4-96

Checked by:

Approved by: MSD

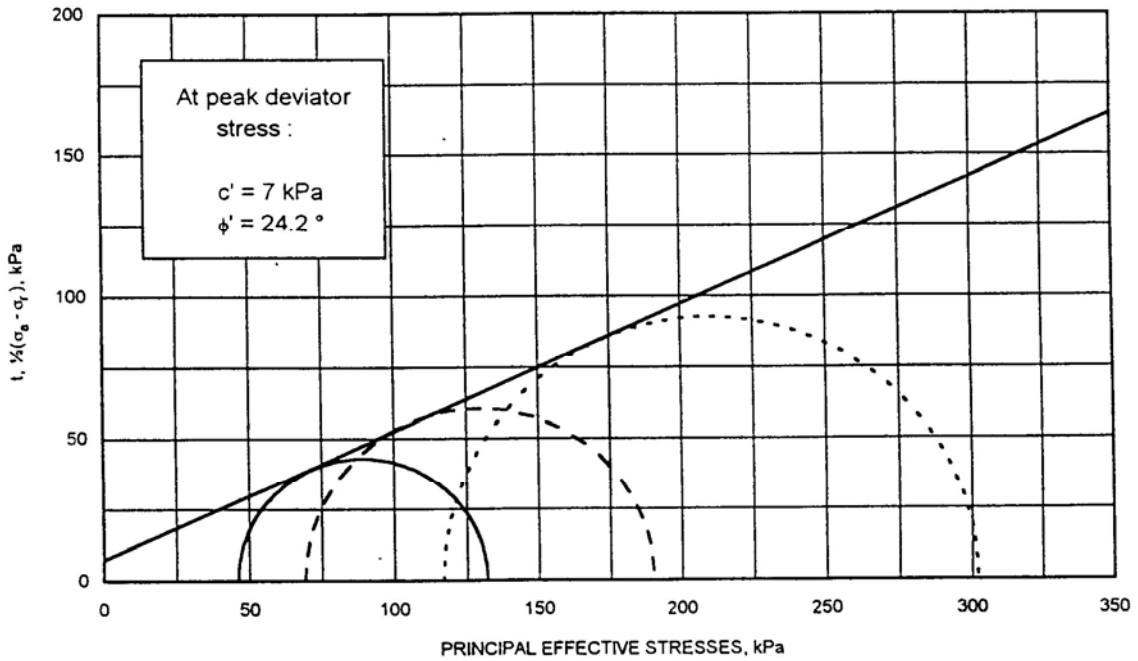
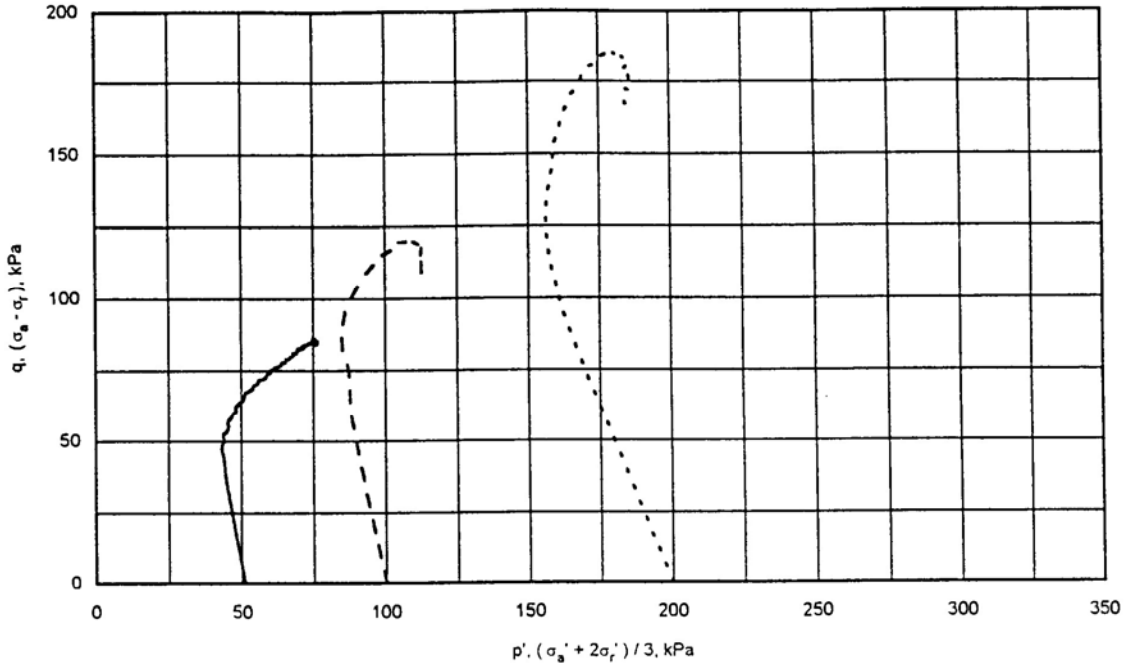


Specimen 1	—	σ'_v : 50kPa	σ'_a : 50kPa	Borehole: CY43	Sample: U18	Depth (m): 5.0
Specimen 2	- -	σ'_v : 100kPa	σ'_a : 100kPa	Borehole: CY43	Sample: U18	Depth (m): 5.0
Specimen 3	· · ·	σ'_v : 200kPa	σ'_a : 200kPa	Borehole: CY43	Sample: U18	Depth (m): 5.0

ISOTROPICALLY CONSOLIDATED UNDRAINED
TRIAxIAL COMPRESSION TEST : SET OF THREE SPECIMENS



TESTING
No. 0919



Specimen 1 —	σ_r' : 50kPa	σ_a' : 50kPa	Borehole: CY43	Sample: U18	Depth (m): 5.0
Specimen 2 - -	σ_r' : 100kPa	σ_a' : 100kPa	Borehole: CY43	Sample: U18	Depth (m): 5.0
Specimen 3 - - -	σ_r' : 200kPa	σ_a' : 200kPa	Borehole: CY43	Sample: U18	Depth (m): 5.0

ISOTROPICALLY CONSOLIDATED UNDRAINED
TRIAXIAL COMPRESSION TEST : SET OF THREE SPECIMENS



TESTING
No. 0919

Date: 18/1/96
 Date: 18-4-96
 Checked by: MSD
 Approved by: MSD
 Filename: U18_104C.DWG
 Template Issue



	SPECIMEN 1	SPECIMEN 2	SPECIMEN 3
Borehole	CY43	CY43	CY43
Sample	U37	U37	U37
Depth (m)	10.0	10.0	10.0

VISUAL DESCRIPTION			
FIRM brown mottled dark greyish brown CLAY with pockets of clayey fine sand and occasional fine sand.			

GENERAL			
Test method used *	L-T-104	L-T-104	L-T-104
Date test started	02/04/96	02/04/96	02/04/96
Type of sample	Undisturbed	Undisturbed	Undisturbed
Specimen orientation	Vertical	Vertical	Vertical
Type of drains fitted	Radial and one end	Radial and one end	Radial and one end

INITIAL			
Diameter (mm)	38.0	38.0	38.0
Length (mm)	75.6	75.6	75.6
Moisture content (%)	28	28	28
Bulk density (Mg/m ³)	2.01	1.97	2.01
Dry density (Mg/m ³)	1.57	1.53	1.57
Voids ratio	0.710	0.749	0.709
Degree of saturation (%)	100	100	100

SATURATION			
Saturation method used †	5.4	5.4	5.4
Pressure increments applied (kPa)	100	100	100
Differential pressure used (kPa)	N/A	N/A	N/A
Pore pressure on completion (kPa)	542	545	584
Cell pressure on completion (kPa)	600	600	700
B value achieved	1.00	0.99	0.96

* Tested in accordance with the following Fugro testing procedure
L-T-104 Isotropically consolidated undrained triaxial compression test

† Tested in accordance with the following clauses of BS 1377 : Part 8 : 1990	
5.3	Saturation by increments of cell and back pressure
5.4	Saturation at constant moisture content

SUMMARY OF
ISOTROPICALLY CONSOLIDATED UNDRAINED
TRIAXIAL COMPRESSION TEST : SET OF THREE SPECIMENS

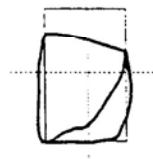




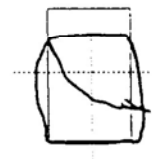
	SPECIMEN 1	SPECIMEN 2	SPECIMEN 3
Borehole	CY43	CY43	CY43
Sample	U37	U37	U37
Depth (m)	10.0	10.0	10.0

CONSOLIDATION : ISOTROPIC			
Cell pressure (kPa)	400	500	700
Back pressure (kPa)	300	300	300
Effective cell pressure (kPa)	100	200	400
Pore pressure on completion (kPa)	300	300	300
Pore pressure dissipation (%)	100	100	100
Moisture content (%)	28	26	26
Bulk density (Mg/m ³)	2.02	2.00	2.05
Dry density (Mg/m ³)	1.58	1.59	1.64
Voids ratio	0.698	0.690	0.639
Degree of saturation (%)	100	100	100
C _{vi} (m ² /year)	0.83	0.97	1.44
M _{vi} (m ² /MN)	0.16	0.23	0.14
Permeability (m/s)	4.10E-11	6.93E-11	6.44E-11

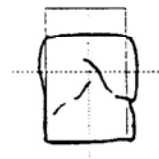
Mode of failure:



Specimen 1



Specimen 2



Specimen 3

Filename: 037_104P.XLS

Date: 18-4-96

Approved by: MSD

SUMMARY OF
ISOTROPICALLY CONSOLIDATED UNDRAINED
TRIAXIAL COMPRESSION TEST : SET OF THREE SPECIMENS



TESTING
No. 0919



	SPECIMEN 1	SPECIMEN 2	SPECIMEN 3
Borehole	CY43	CY43	CY43
Sample	U37	U37	U37
Depth (m)	10.0	10.0	10.0

SHEARING			
Initial pore pressure (kPa)	300	301	300
Initial effective cell pressure (kPa)	100	199	400
Rate of strain (%/hour)	1.20	1.20	1.20
At peak deviator stress			
Corrected deviator stress (kPa)	132	218	332
Membrane correction applied (kPa)	4	3	3
Drain correction applied (kPa)	10	10	10
Axial strain (%)	15.63	13.69	12.48
Volumetric strain (%)	38.00	104.00	238.00
Major principal effective stress (kPa)	194	313	494
Minor principal effective stress (kPa)	62	95	162
Principal effective stress ratio	3.13	3.30	3.05
e 50 (%)	0.33	0.51	0.75
Secant modulus at e 50 (kPa)	19743	21235	22262
At peak principal effective stress ratio			
Corrected deviator stress (kPa)	108	203	321
Membrane correction applied (kPa)	4	3	3
Drain correction applied (kPa)	10	10	10
Axial strain (%)	3.75	5.98	7.50
Volumetric strain (%)	59.00	116.00	249.00
Major principal effective stress (kPa)	149	286	472
Minor principal effective stress (kPa)	41	83	151
Principal effective stress ratio	3.63	3.44	3.13
e 50 (%)	0.21	0.49	0.73
Secant modulus at e 50 (kPa)	25293	20491	21971

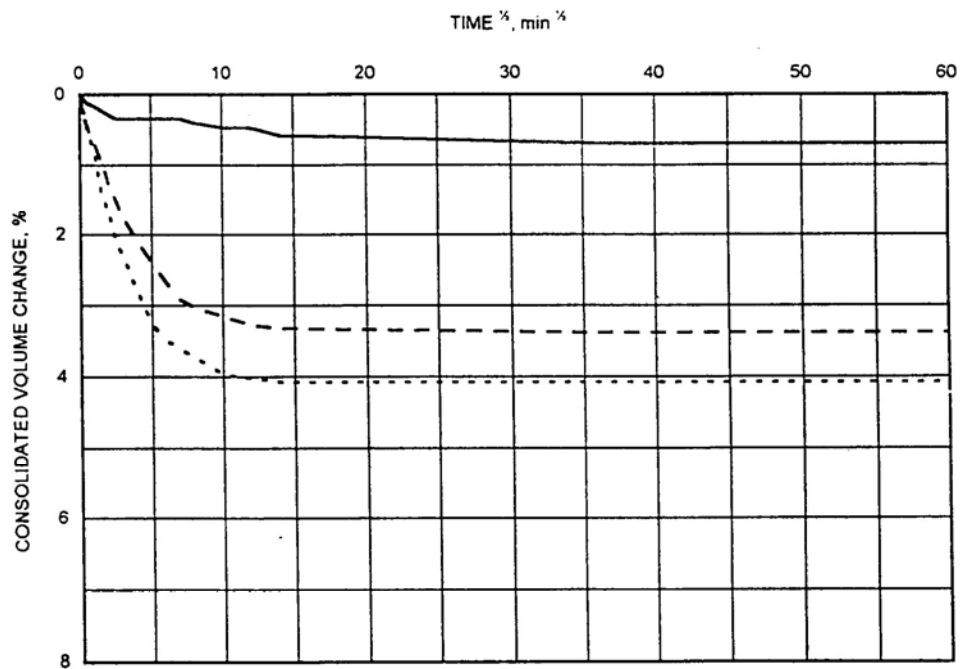
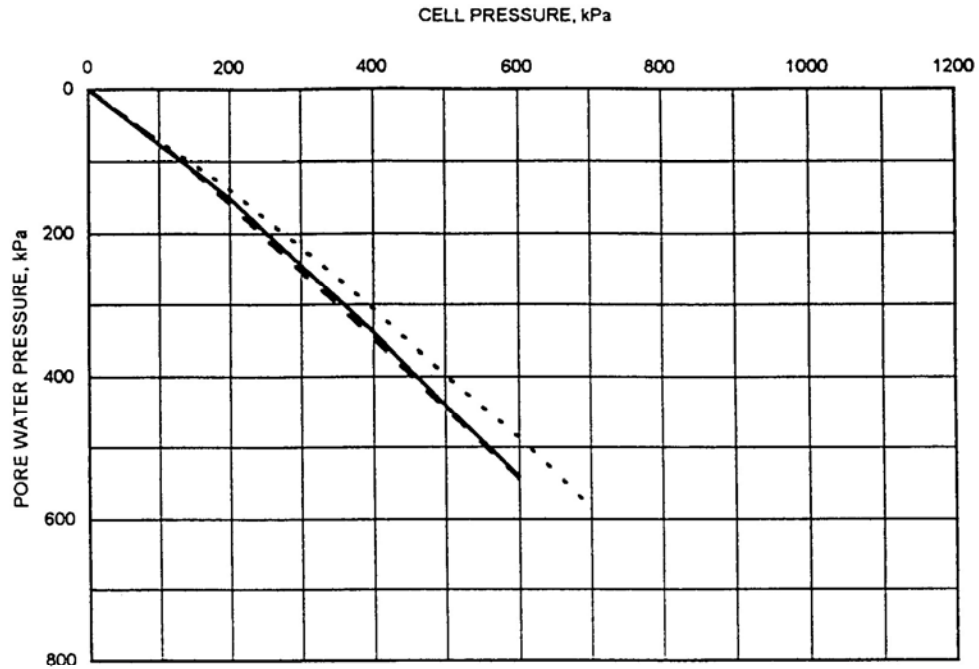
Filename: 037_104P.XLS

Approved by: M.S.D Date: 18-4-96

FINAL CONDITIONS			
Moisture content (%)	28	26	26
Bulk density (Mg/m ³)	2.02	2.00	2.05
Dry density (Mg/m ³)	1.58	1.59	1.64

SUMMARY OF
ISOTROPICALLY CONSOLIDATED UNDRAINED
TRIAxIAL COMPRESSION TEST : SET OF THREE SPECIMENS





Specimen 1	—	σ_r : 100kPa	σ_a : 100kPa	Borehole: CY43	Sample: U37	Depth (m): 10.0
Specimen 2	- -	σ_r : 200kPa	σ_a : 200kPa	Borehole: CY43	Sample: U37	Depth (m): 10.0
Specimen 3	- · - ·	σ_r : 400kPa	σ_a : 400kPa	Borehole: CY43	Sample: U37	Depth (m): 10.0

ISOTROPICALLY CONSOLIDATED UNDRAINED
TRIAxIAL COMPRESSION TEST : SET OF THREE SPECIMENS



TESTING
No. 0919

Date: 16/01/96

Drawn by: JKS

Template Issue: 1

Filename: 037_104A.UHG

Date: 18/4/96

Date: 18-4-96

Checked by: DGC

Approved by: MSD

Date 18/04/96

Drawn by JKS

Template Issue: 1

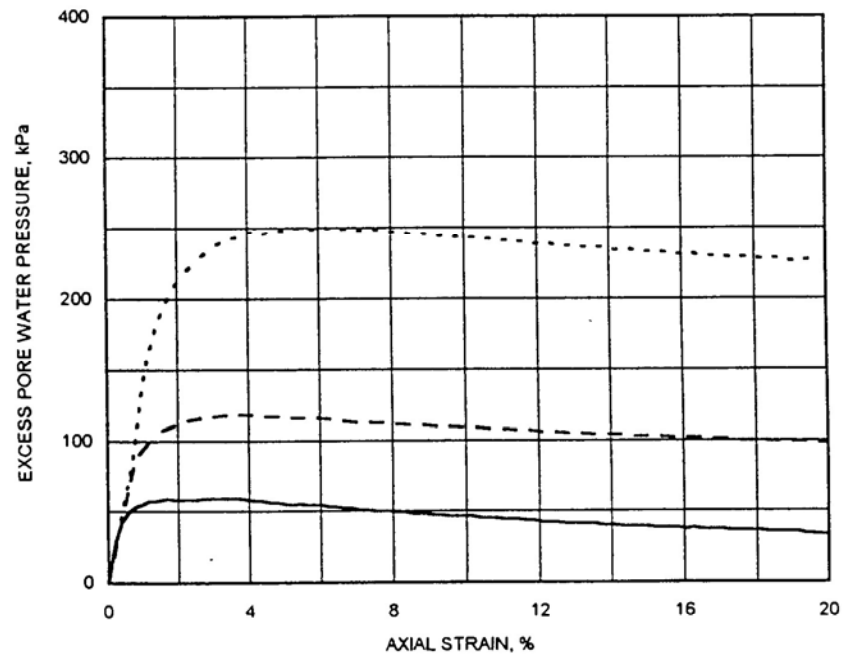
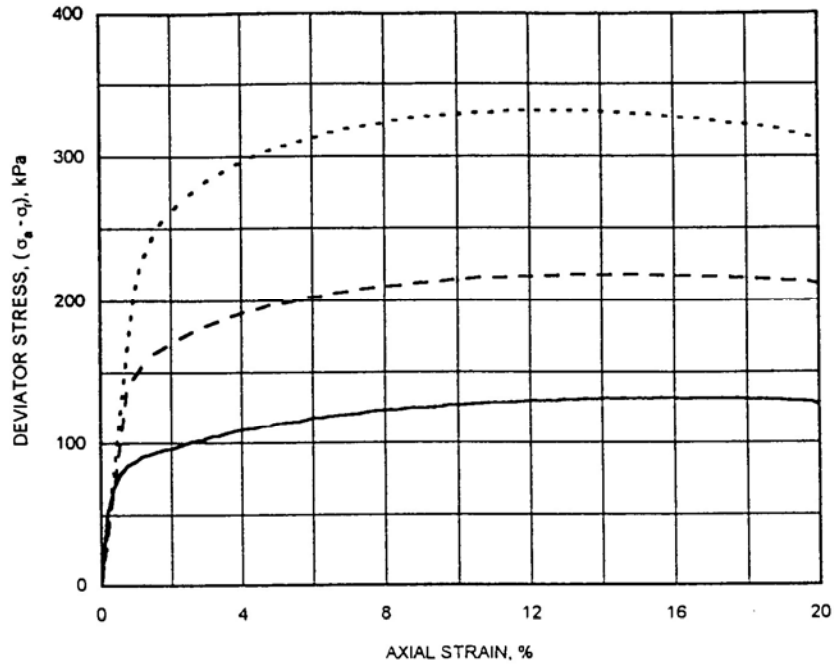
Filename 037_104B.ORG

Date 18/4/96

Date 18-4-96

Checked by *MSD*

Approved by *MSD*

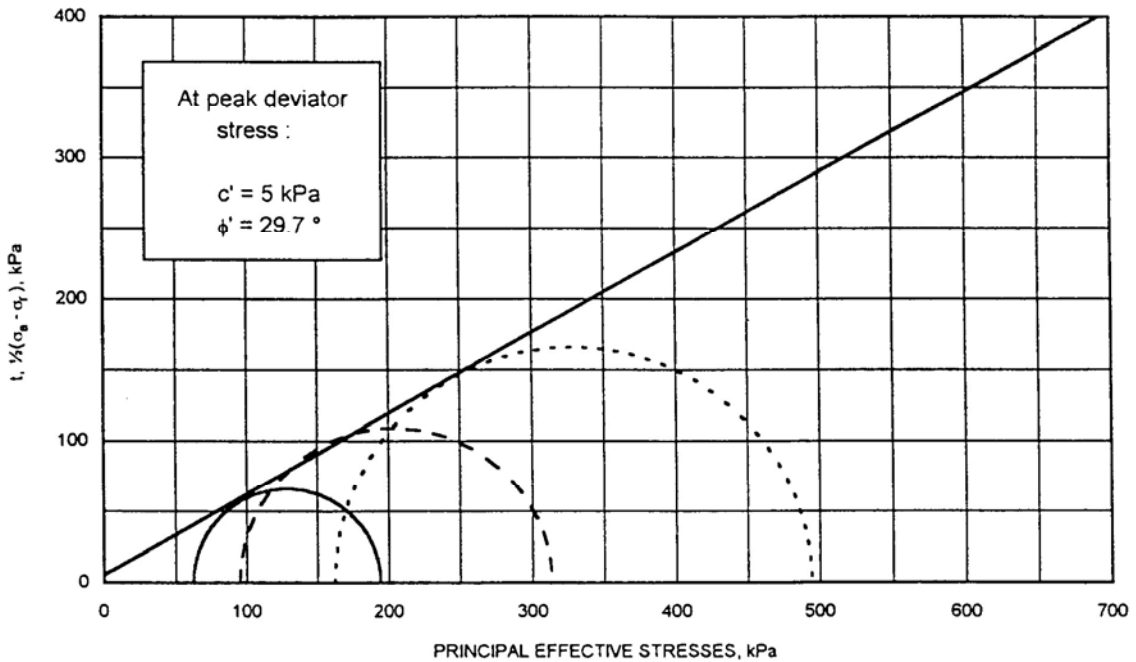
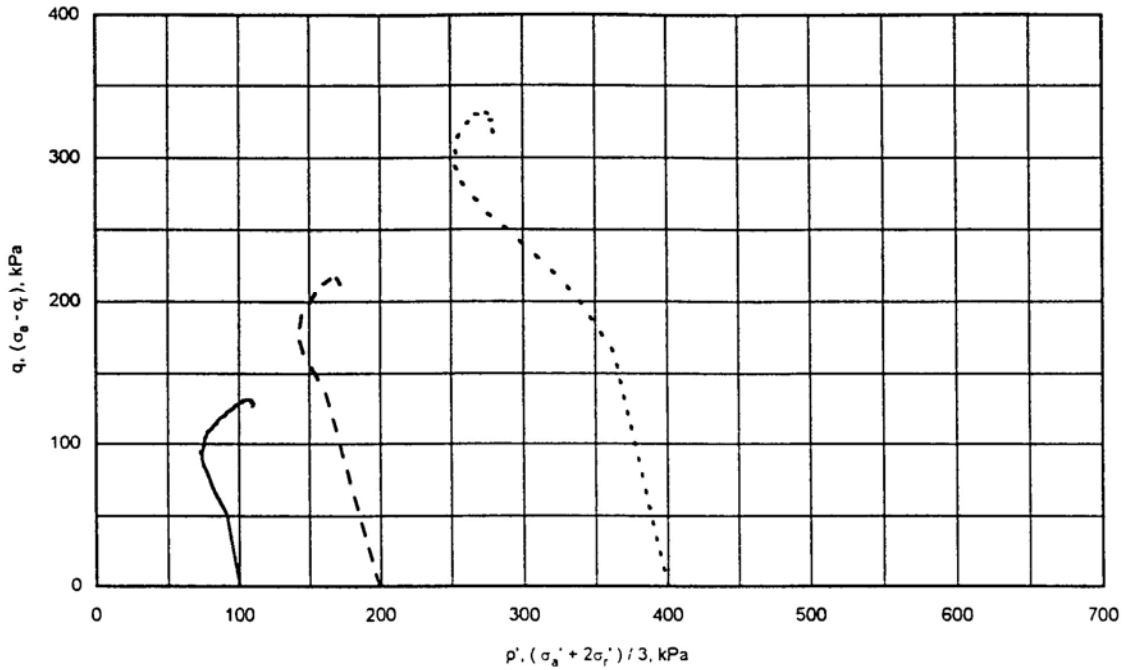


Specimen 1 —	σ'_r : 100kPa	σ'_a : 100kPa	Borehole: CY43	Sample: U37	Depth (m): 10.0
Specimen 2 - -	σ'_r : 200kPa	σ'_a : 200kPa	Borehole: CY43	Sample: U37	Depth (m): 10.0
Specimen 3 - - -	σ'_r : 400kPa	σ'_a : 400kPa	Borehole: CY43	Sample: U37	Depth (m): 10.0

ISOTROPICALLY CONSOLIDATED UNDRAINED
TRIAxIAL COMPRESSION TEST : SET OF THREE SPECIMENS



TESTING
No. 0919



Specimen 1	—	σ_r' : 100kPa	σ_a' : 100kPa	Borehole: CY43	Sample: U37	Depth (m): 10.0
Specimen 2	- -	σ_r' : 200kPa	σ_a' : 200kPa	Borehole: CY43	Sample: U37	Depth (m): 10.0
Specimen 3	· · · ·	σ_r' : 400kPa	σ_a' : 400kPa	Borehole: CY43	Sample: U37	Depth (m): 10.0

ISOTROPICALLY CONSOLIDATED UNDRAINED
TRIAxIAL COMPRESSION TEST : SET OF THREE SPECIMENS

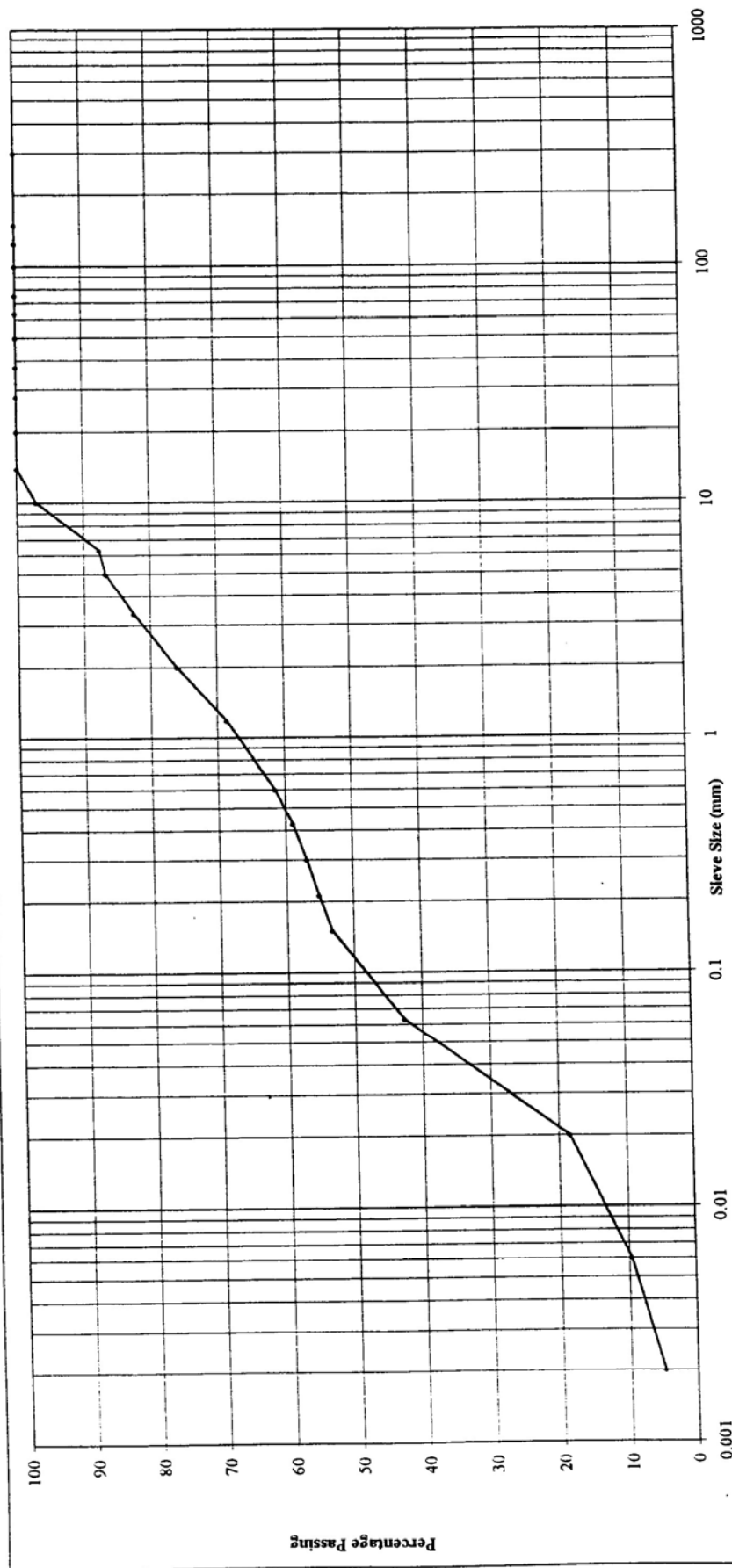


TESTING
No. 0919

Date: 18/4/96
 Checked by: DGF
 Approved by: MSD
 Drawn by: JKS
 Date: 10/04/98
 Template Issue 1
 Filename: 037_104C.DWG

PARTICLE SIZE DISTRIBUTION

Project Name Shelton road / Willowbrook road, Corby.
Borehole CY42
Depth (m) 9.00



CLAY		SILT			SAND			GRAVEL			BOULDERS	
Fine	Medium	Fine	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse			
0	0	0	0	0	0	0	0	0	0	0	0	

Remarks

Test method BSI 1377:Part2:1990 Clause 9.2

Client

MENTOR
 ----- Site insight -----

Project No

96/27

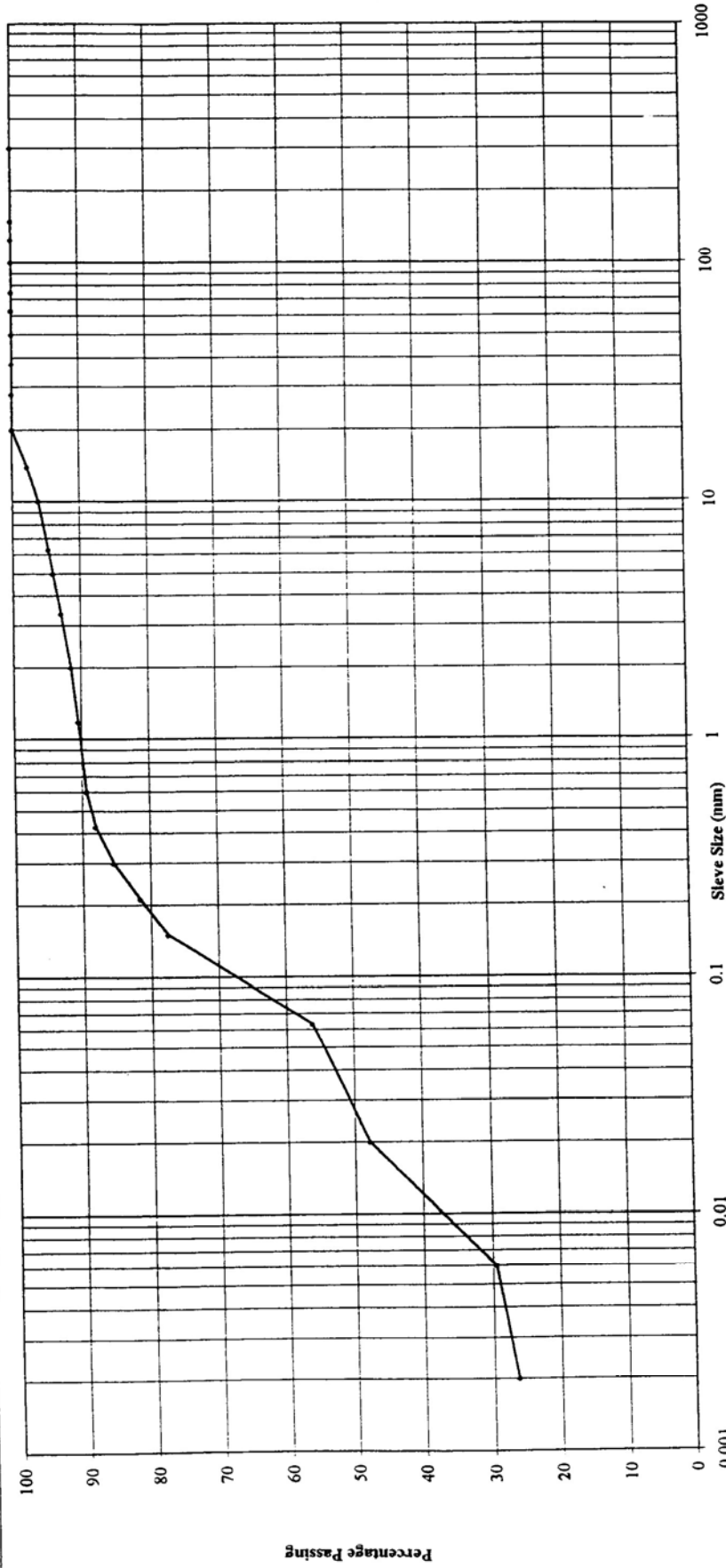
PFMK/CNT

PARTICLE SIZE DISTRIBUTION

Project Name: Shelton road / Willowbrook road, Corby.

Borehole: CY42

Depth (m): 10.00



CLAY	Fine	Medium	Coarse	Fine	Coarse	Fine	Coarse	Fine	Coarse	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND		GRAVEL							

Remarks

Test method: BS1377:Part2:1990 Clause 9.2

Client

Project No

MENTOR

Site insight

9/6/27

PFMK/CNT

Depth (m)	w (%)	w _f (%)	w _p (%)	I _p (%)	Bulk Density (Mgm ⁻³)	STRENGTH				CHEMICAL			Soil Type	Remarks
						Type	Total Minor Principal Stress (kPa)	Principal Stress Difference (kPa)	Undrained Shear Strength (kPa)	Ø (deg)	pH	Soil SO ₃ (%)		
3.00	22	39	15	24									F	
5.75	18	40	16	24									F	
8.25	78	73	52	21									F	
13.25	100	89	62	27									F	

Notes:

- U39 Triaxial test set of three 38mm diameter samples
- U1 Triaxial test on a 106mm dia sample at single cell pressure
- UM Triaxial test on a 106mm dia sample - Multistage test
- UCS Unconfined compression test on soil
- UCR Unconfined compression test on rock
- * Sulphate test on 2:1 water-soil extract

- VH Hand shear vane test
- VB Borehole shear vane test
- PSD Particle Size Distribution
- OCC One-Dimensional Consolidation Test
- OGC Organic Matter Content (BS 1377:Part 3: 1990)
- OMC Optimum Moisture Content

- MOD Maximum Dry Density
- CBR California Bearing Ratio test
- SST Soil Suction Test - Filter paper method
- SG Specific Gravity (Particle Density)
- MCT Multistage Consolidated Unrained Triaxial

Client

Commission for the New Towns / Frank Graham Consultants.



Geotechnical & Materials Consultants Ltd.

Report

96/027

Depth (m)	w (%)	wl (%)	wp (%)	lp (%)	Bulk Density (Mgm ⁻³)	STRENGTH					CHEMICAL			Soil Type	Remarks
						Type	Total Minor Principal Stress (kPa)	Principal Stress Difference (kPa)	Undrained Shear Strength (kPa)	Ø (deg)	pH	Soil SO ₃ (%)	Water SO ₃ (gl ⁻¹)		
1.50														F	MCT - Separati: sheet
2.00	20	44	18	26										F	
7.10	25	53	20	33										F	
11.00	101	96	51	45										F	
13.00	96	84	60	24											

Notes:

U38 Triaxial test set of three 38mm diameter samples
 U1 Triaxial test on a 106mm dia sample at single cell pressure
 UM Triaxial test on a 106mm dia sample - Multistage test
 UCS Unconfined compression test on soil
 UCR Unconfined compression test on rock
 * Sulphate test on 2:1 water-soil extract

VH Hand shear vane test
 VB Borehole shear vane test
 PSD Particle Size Distribution
 ODC One-Dimensional Consolidation Test
 OGC Organic Matter Content (BS 1377:Part 3: 1990)
 OMC Optimum Moisture Content

MDD Maximum Dry Density
 CBR California Bearing Ratio test
 SST Soil Suction Test - Filter paper method
 SG Specific Gravity (Particle Density)
 MCT Multistage Consolidated Unconsolidated Triaxial

Client

Commission for the New Towns / Frank Graham Consultants.



Geotechnical & Materials Consultants Ltd.

Report

96/027



	SPECIMEN 1	SPECIMEN 2	SPECIMEN 3
Borehole	CY46	CY46	CY46
Sample	U7	U7	U7
Depth (m)	1.5	1.5	1.5

VISUAL DESCRIPTION

SOFT to FIRM dark grey CLAY with fine to medium chalk fragments and occasional fine gravel.

GENERAL

	L-T-104	L-T-104	L-T-104
Test method used *	L-T-104	L-T-104	L-T-104
Date test started	28/03/96	28/03/96	28/03/96
Type of sample	Undisturbed	Undisturbed	Undisturbed
Specimen orientation	Vertical	Vertical	Vertical
Type of drains fitted	Radial and one end	Radial and one end	Radial and one end

INITIAL

Diameter (mm)	37.9	37.9	37.9	37.9
Length (mm)	75.8	75.8	75.8	75.8
Moisture content (%)	22	22	22	22
Bulk density (Mg/m ³)	2.09	2.09	2.09	2.09
Dry density (Mg/m ³)	1.71	1.71	1.71	1.71
Voids ratio	0.570	0.565	0.563	0.563
Degree of saturation (%)	100	100	100	100

SATURATION

Saturation method used †	5.3	5.3	5.3
Pressure increments applied (kPa)	100	100	100
Differential pressure used (kPa)	10	10	10
Pore pressure on completion (kPa)	490	386	385
Cell pressure on completion (kPa)	500	400	400
B value achieved	1.00	0.99	0.98

* Tested in accordance with the following Fugro testing procedure
L-T-104 Isotropically consolidated undrained triaxial compression test

† Tested in accordance with the following
clauses of BS 1377 : Part 8 : 1990

5.3	Saturation by increments of cell and back pressure
5.4	Saturation at constant moisture content

**SUMMARY OF
ISOTROPICALLY CONSOLIDATED UNDRAINED
TRIAXIAL COMPRESSION TEST : SET OF THREE SPECIMENS**



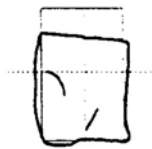
TESTING



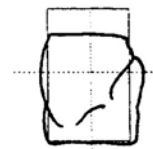
	SPECIMEN 1	SPECIMEN 2	SPECIMEN 3
Borehole	CY46	CY46	CY46
Sample	U7	U7	U7
Depth (m)	1.5	1.5	1.5

CONSOLIDATION : ISOTROPIC			
Cell pressure (kPa)	320	340	380
Back pressure (kPa)	300	300	300
Effective cell pressure (kPa)	20	40	80
Pore pressure on completion (kPa)	300	300	300
Pore pressure dissipation (%)	100	100	100
Moisture content (%)	22	21	21
Bulk density (Mg/m ³)	2.09	2.11	2.12
Dry density (Mg/m ³)	1.71	1.74	1.76
Voids ratio	0.564	0.542	0.523
Degree of saturation (%)	100	100	100
Cvi (m ² /year)	3.29	0.29	7.29
Mvi (m ² /MN)	0.27	0.50	0.38
Permeability (m/s)	2.75E-10	4.59E-11	8.61E-10

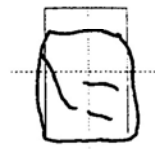
Mode of failure:



Specimen 1



Specimen 2



Specimen 3

Filename: 007_104P.XLS

Approved by: MLD Date: 18/4/96

SUMMARY OF
ISOTROPICALLY CONSOLIDATED UNDRAINED
TRIAxIAL COMPRESSION TEST : SET OF THREE SPECIMENS



TESTING
No. 0919