ALLIED EXPLORATION AND GEOTECHNICS LIMITED

Unit 25 Stella Gill Industrial Estate, Pelton Fell
Chester-le-Street, Co.Durham. DH2 2RG
a UKAS LABORATORY Testing No. 1367

UKAS TESTING
1367

Consolidated Drained Shear Box Test

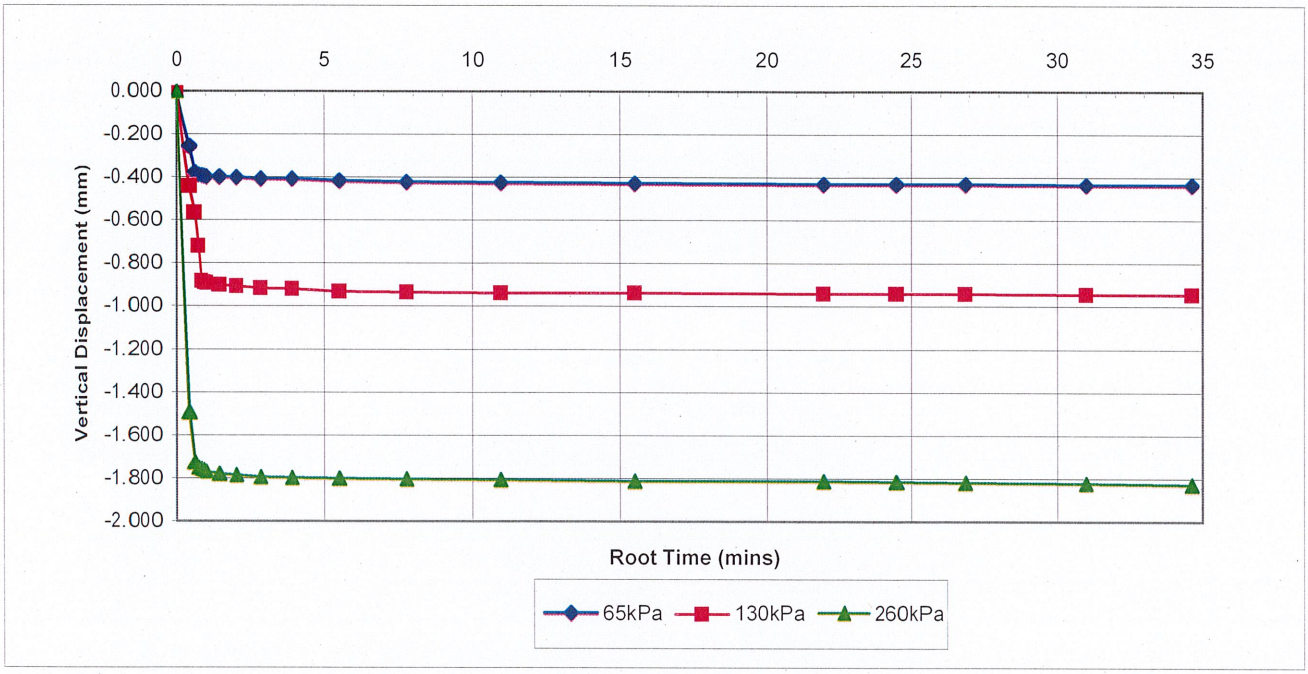
BS 1377 : PART 7 : 1990 Clause 4

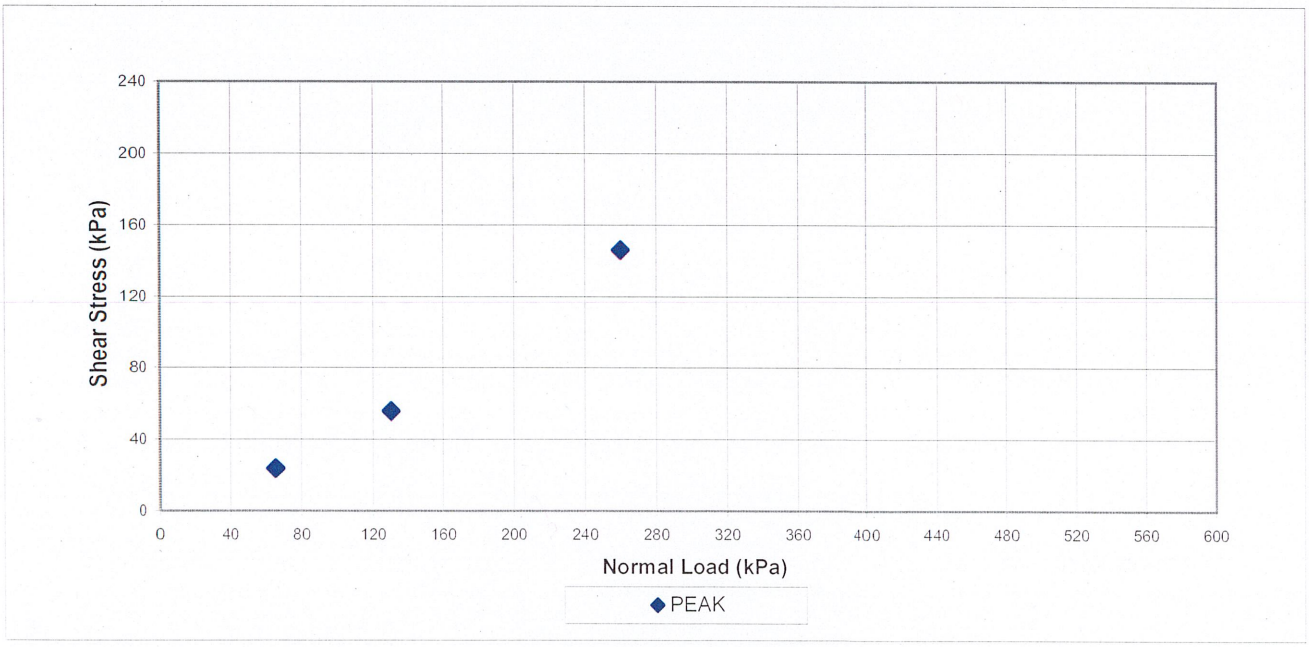
(Specimen(s) Tested Submerged)

Site: Preliminary Onshore Ground Investigation for NZT

Client: AECOM **Job No.** 4339

Borehole: MS BH15 **Sample:** B30 **Depth:** 7.95 m.





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Consolidated Drained Shear Box Test

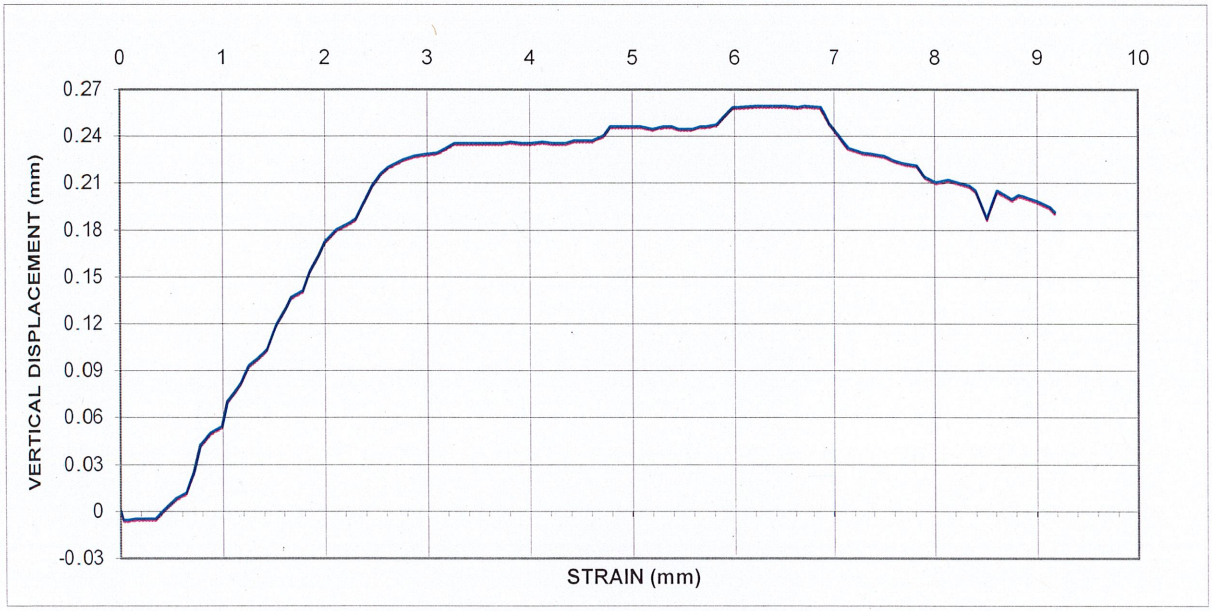
BS 1377 : PART 7 : 1990 Clause 4

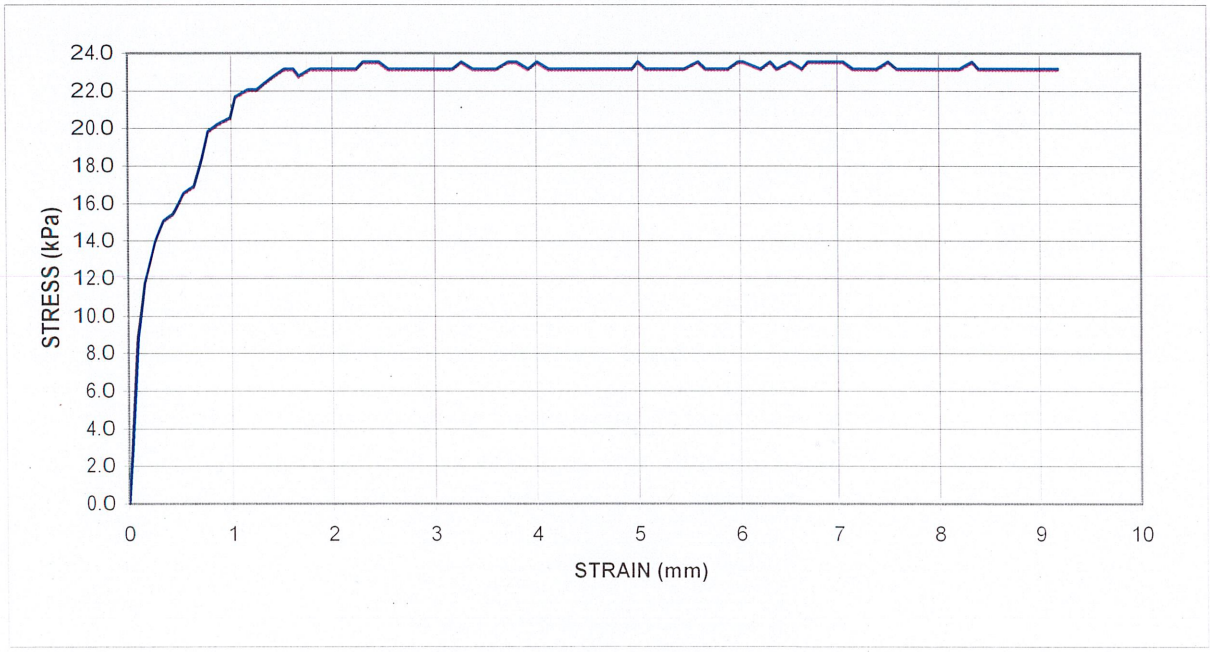
(Specimen(s) Tested Submerged)

Site: Preliminary Onshore Ground Investigation for NZT
Client: AECOM **Job No.:** 4339

Borehole: MS BH15 **Sample:** B30 **Depth:** 7.95 m.

Stage Number 1 **Pressure** 65 kPa





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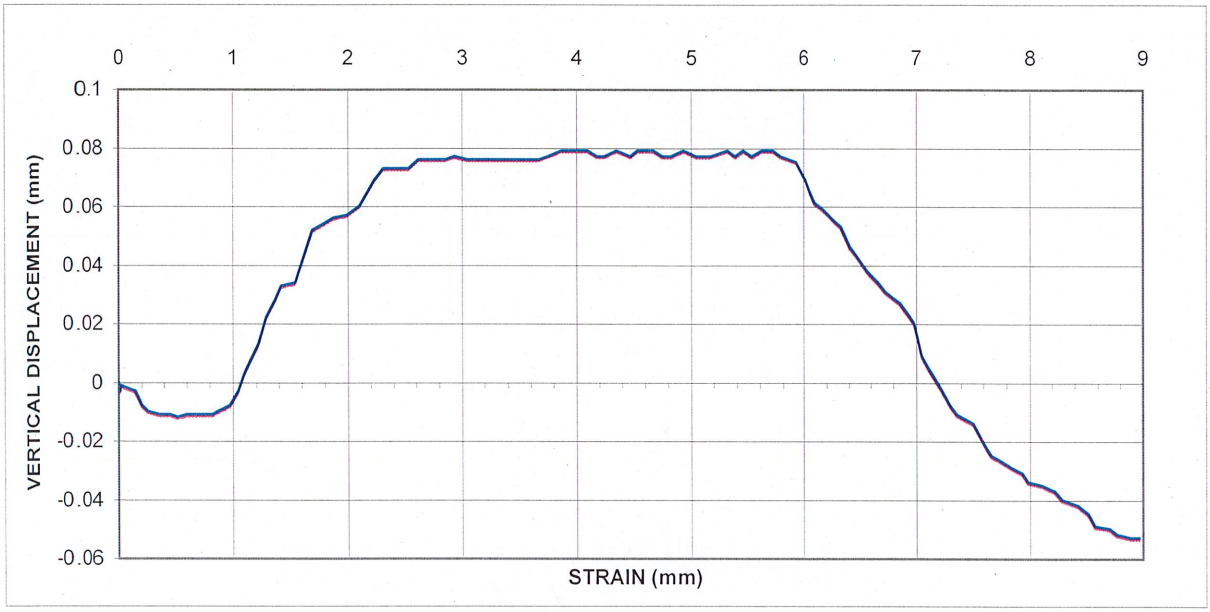
BS 1377 : PART 7 : 1990 Clause 4

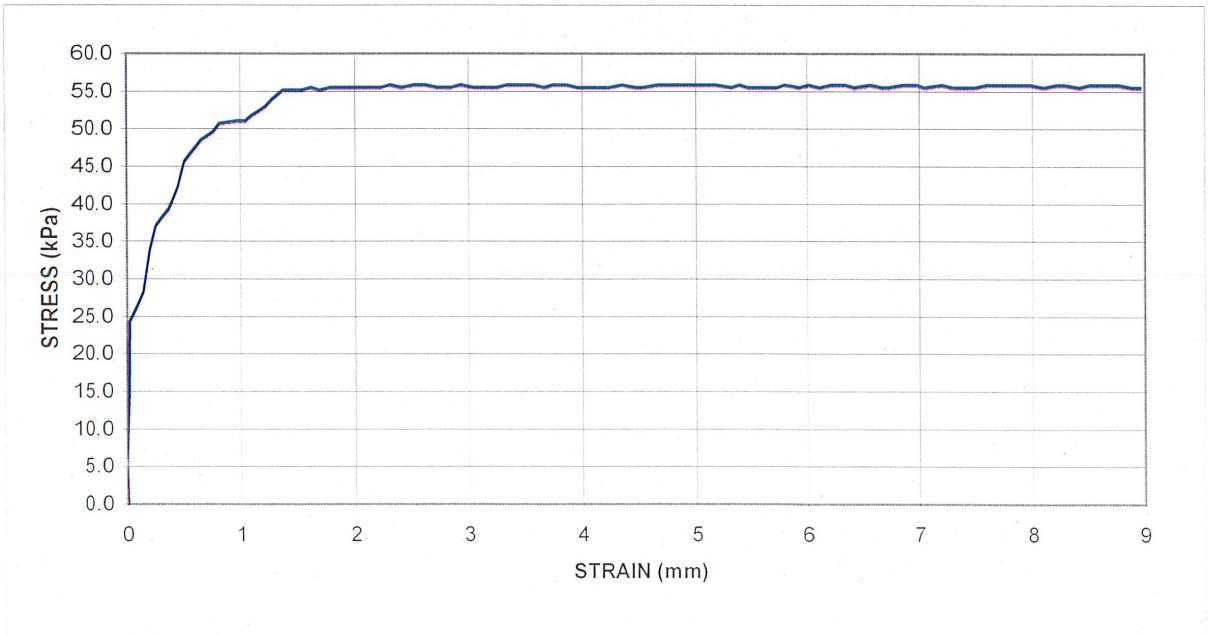
(Specimen(s) Tested Submerged)

Site: Preliminary Onshore Ground Investigation for NZT
Client: AECOM **Job No.:** 4339

Borehole: MS BH15 **Sample:** B30 **Depth:** 7.95 m.

Stage Number 2 **Pressure** 130 kPa





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Consolidated Drained Shear Box Test

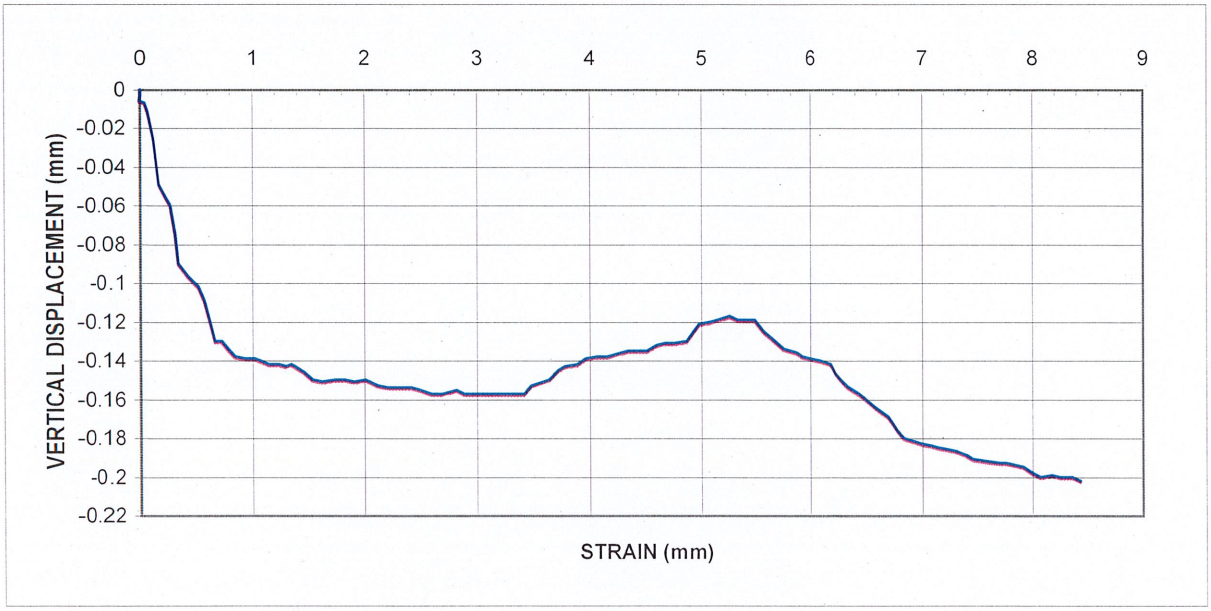
BS 1377 : PART 7 : 1990 Clause 4

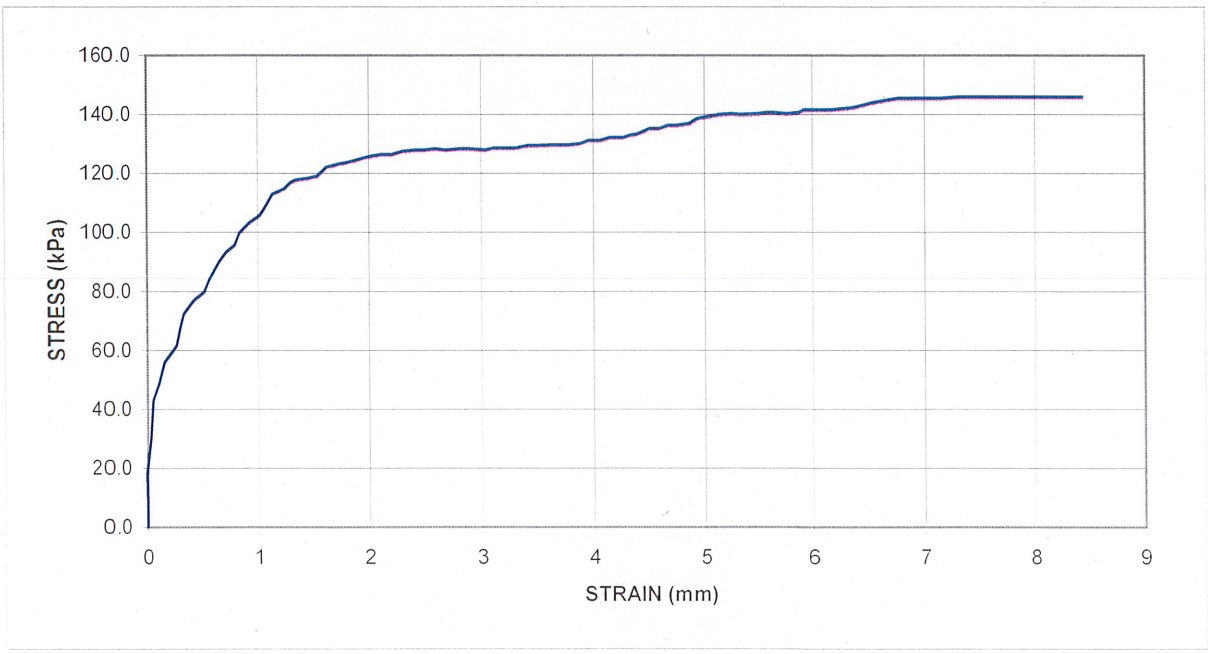
(Specimen(s) Tested Submerged)

Site: Preliminary Onshore Ground Investigation for NZT
Client: AECOM **Job No.:** 4339

Borehole: MS BH15 **Sample:** B30 **Depth:** 7.95 m.

Stage Number 3 **Pressure** 260 kPa





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Consolidated Drained Shear Box Test

BS 1377 : PART 7 : 1990 Clause 4

(Specimen(s) Tested Submerged)

Site: Preliminary Onshore Ground Investigation for NZT

Client: AECOM **Job No.** 4339

Borehole: MS\BH16 **Sample:** B30 **Depth:** 5.90 m

For sample description please refer to sample description sheet

Stage Number		**1**	**2**	**3**
Specific Depth	m.	N/A	N/A	N/A
Length	mm	60.0	60.0	60.0
Height	mm	23.5	23.8	23.9
Initial Moisture Content	%	17.9	17.9	17.9
Initial Wet density	mg/m^3	1.79	1.77	1.76
Initial Dry density	mg/m^3	1.52	1.50	1.50
Particle Density (Assumed)	mg/m^3	2.65	2.65	2.65
CONSOLIDATION				
Normal Stress	kPa	60	120	240
Height at end of Stage	mm	23.0	23.3	23.0
Duration	Day(s)	0.5	0.5	0.5
SHEARING				
Rate of Strain	mm/min	0.312	0.315	0.311
Peak Shear Stress	kPa	27.1	55.4	126.7
Displacement at Peak Stress	mm	4.86	8.57	8.96
Rate for Residual Runs	mm/min	N/A	N/A	N/A
Residual Shear Stress	kPa	N/A	N/A	N/A
Duration	Day(s)	0.5	0.5	0.5
Final Moisture Content	%	21.5	21.2	21.3
Final Wet Density	mg/m^3	1.88	1.86	1.88
Final Dry Density	mg/m^3	1.55	1.54	1.55

PEAK SHEAR STRESS PARAMETERS

Apparent Cohesion C'	kPa	0
Angle of Shearing Resistance phi '	Deg	27°

RESIDUAL PARAMETERS

Apparent Cohesion C'	kPa	N/A
Angle of Shearing Resistance phi 'r	Deg	N/A

REMARKS:

DATE TESTED 01/10/2021 **NAME** Michelle Selkirk

DATE OF ISSUE 15/10/2021 **APPROVED BY** [redacted]

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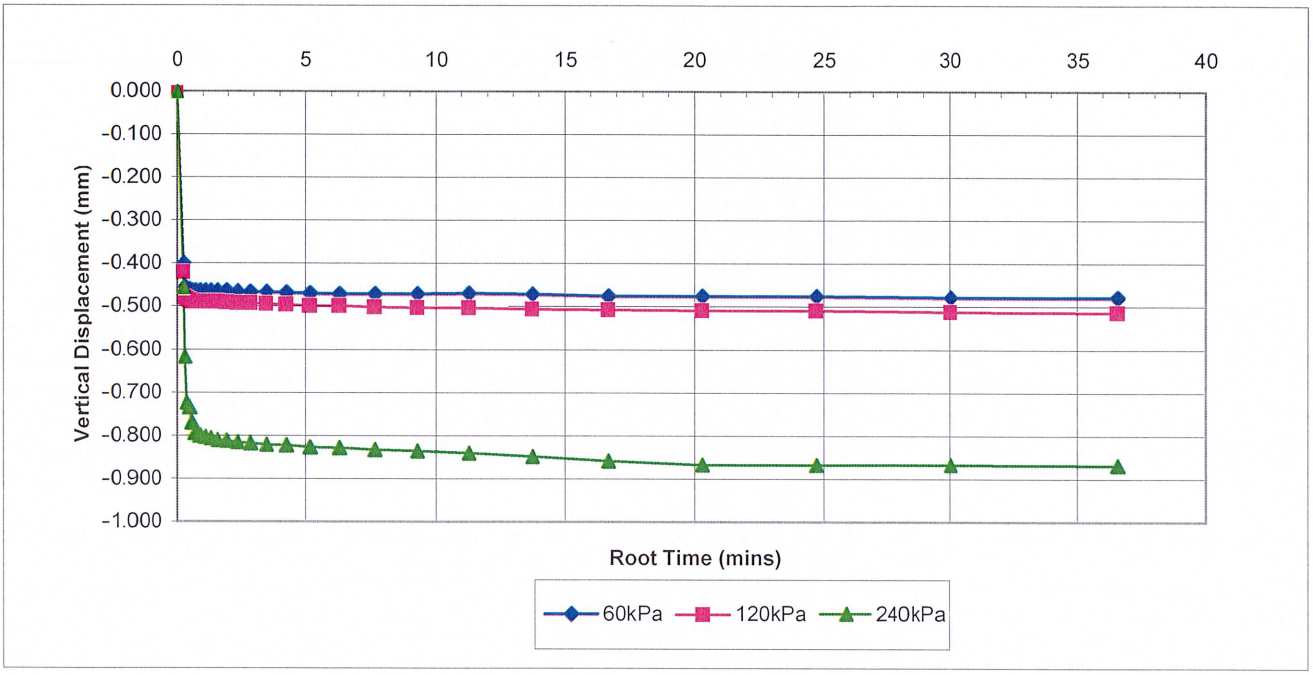
BS 1377 : PART 7 : 1990 Clause 4

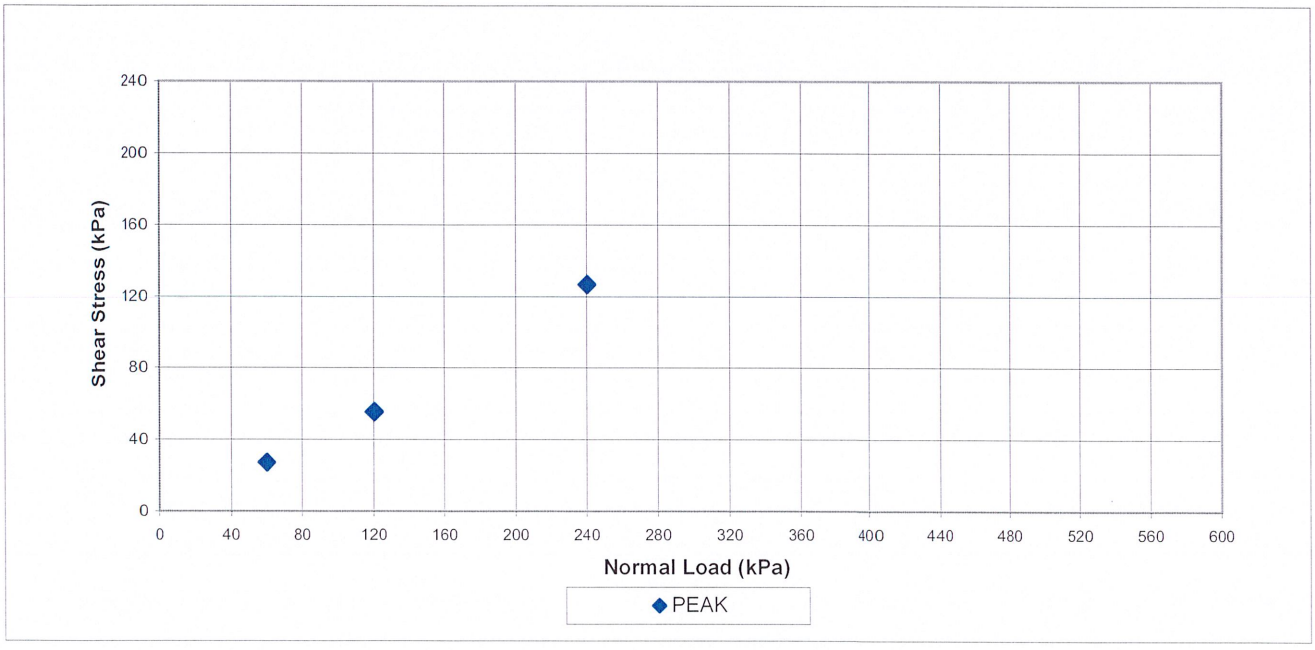
(Specimen(s) Tested Submerged)

Site: Preliminary Onshore Ground Investigation for NZT

Client: AECOM **Job No.** 4339

Borehole: MS\BH16 **Sample:** B30 **Depth:** 5.90 m.





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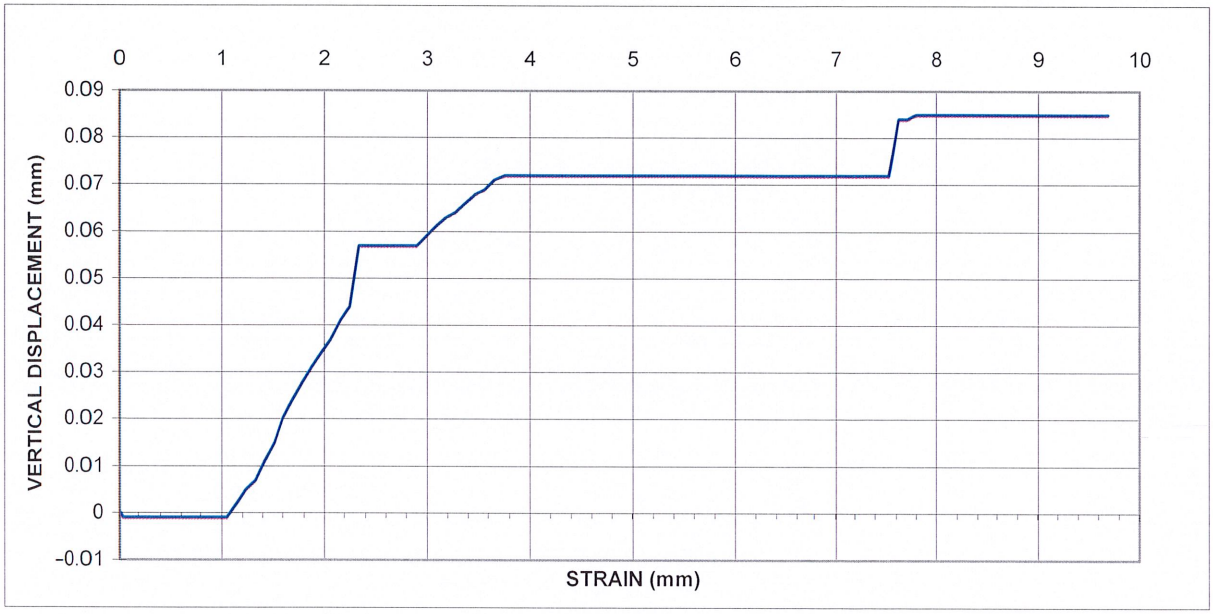
BS 1377 : PART 7 : 1990 Clause 4

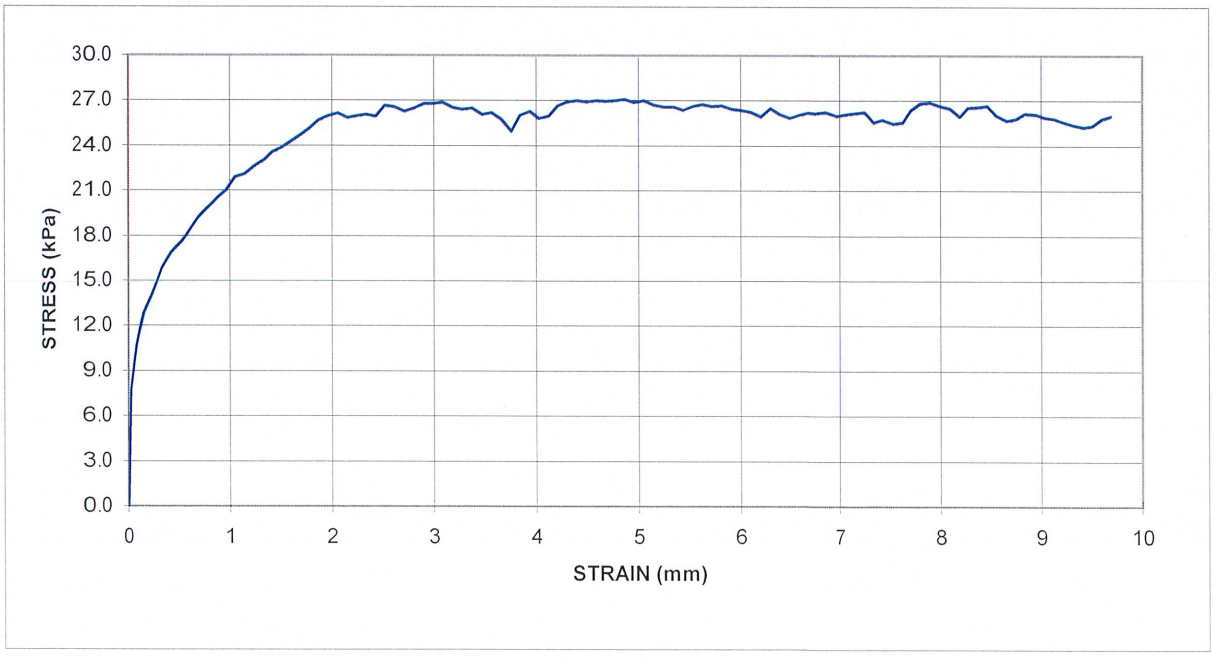
(Specimen(s) Tested Submerged)

Site: Preliminary Onshore Ground Investigation for NZT
Client: AECOM **Job No.:** 4339

Borehole: MS\BH16 **Sample:** B30 **Depth:** 5.90 m.

Stage Number 1 **Pressure** 60 kPa





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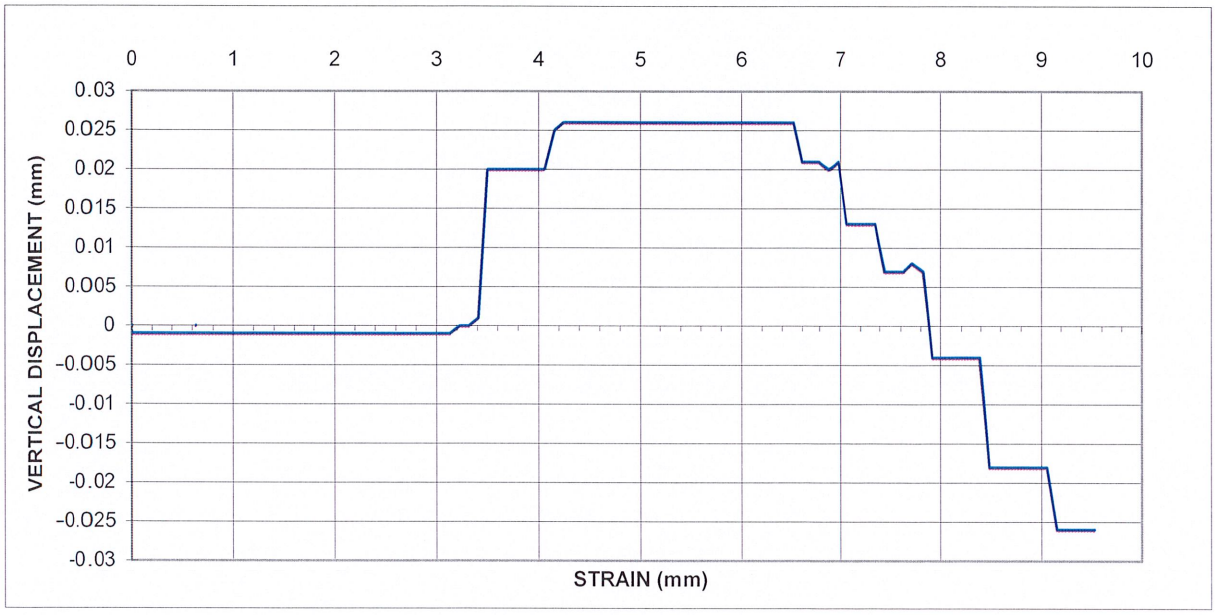
BS 1377 : PART 7 : 1990 Clause 4

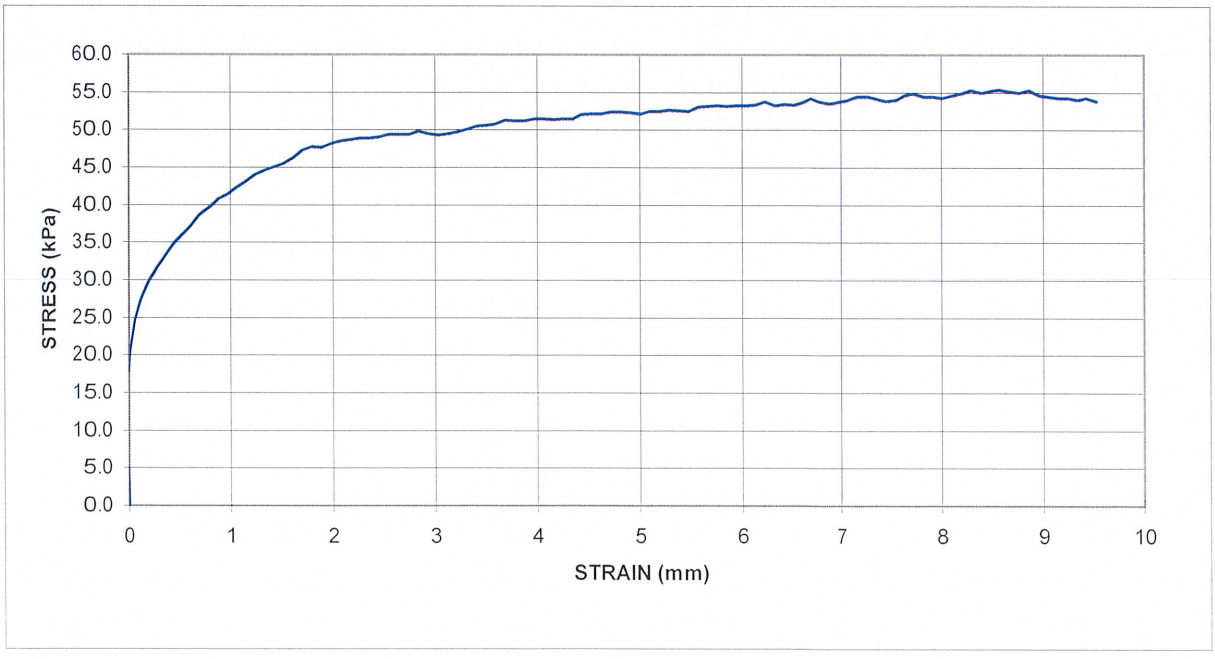
(Specimen(s) Tested Submerged)

Site: Preliminary Onshore Ground Investigation for NZT
Client: AECOM **Job No.:** 4339

Borehole: MS\BH16 **Sample:** B30 **Depth:** 5.90 m.

Stage Number 2 **Pressure** 120 kPa





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BS 1377 : PART 7 : 1990 Clause 4

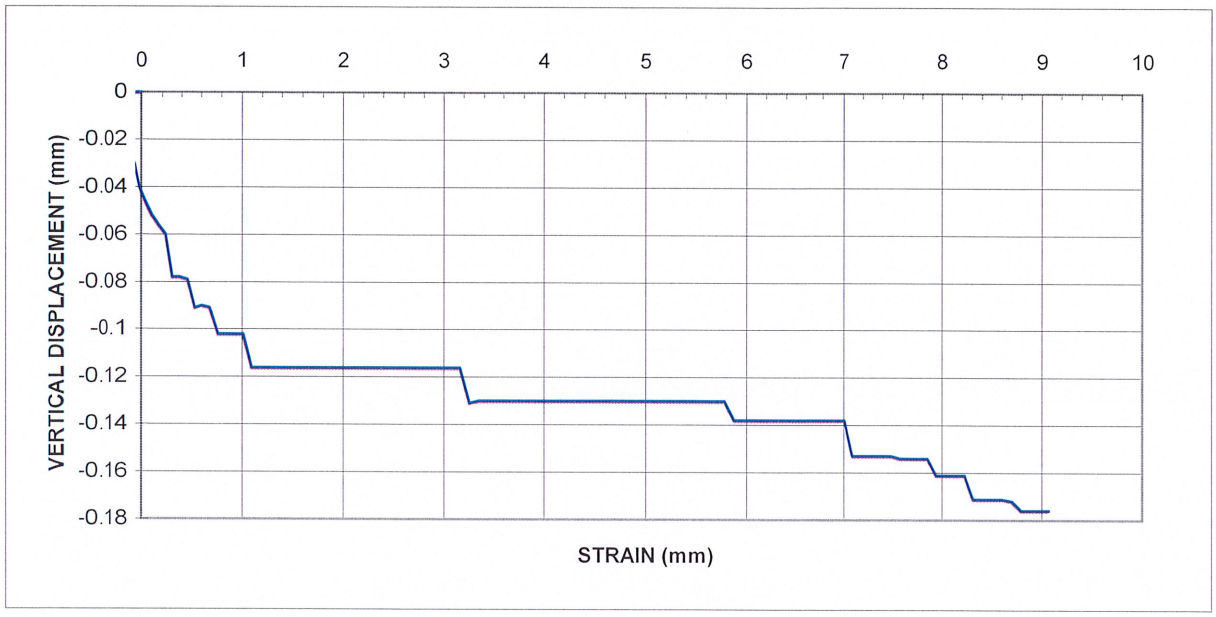
(Specimen(s) Tested Submerged)

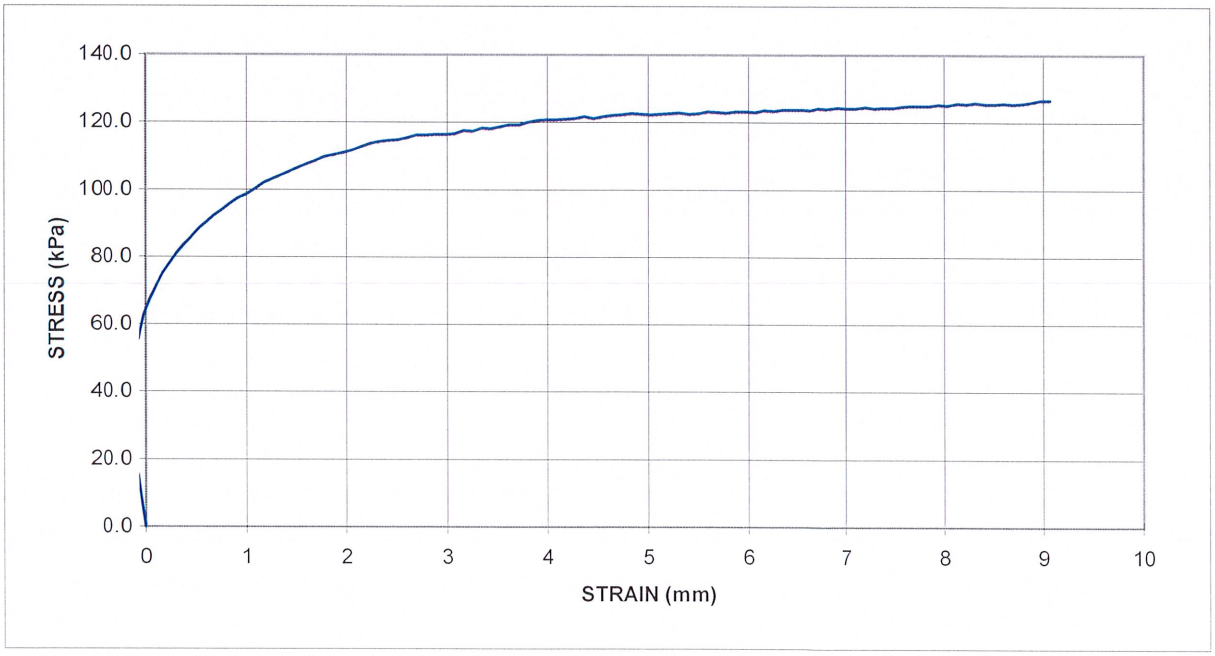
Site: Preliminary Onshore Ground Investigation for NZT

Client: AECOM **Job No.:** 4339

Borehole: MS\BH16 **Sample:** B30 **Depth:** 5.90 m.

Stage Number 3 **Pressure** 240 kPa





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BS 1377 : PART 7 : 1990 Clause 4

(Specimen(s) Tested Submerged)

Site: Preliminary Onshore Ground Investigation for NZT
Client: AECOM **Job No:** 4339

Borehole: MS\BH17 **Sample:** B31 **Depth:** 7.95 m

For sample description please refer to sample description sheet

Stage Number		**1**	**2**	**3**
Specific Depth	m.	N/A	N/A	N/A
Length	mm	60.0	60.0	60.0
Height	mm	24.2	24.7	23.9
Initial Moisture Content	%	21.4	21.4	21.4
Initial Wet density	mg/m^3	1.81	1.80	1.83
Initial Dry density	mg/m^3	1.49	1.48	1.50
Particle Density (Assumed)	mg/m^3	2.65	2.65	2.65
CONSOLIDATION				
Normal Stress	kPa	75	150	300
Height at end of Stage	mm	23.6	24.2	23.1
Duration	Day(s)	0.5	0.5	0.5
SHEARING				
Rate of Strain	mm/min	0.241	0.246	0.244
Peak Shear Stress	kPa	45.9	88.6	200.9
Displacement at Peak Stress	mm	1.88	2.03	2.27
Rate for Residual Runs	mm/min	N/A	N/A	N/A
Residual Shear Stress	kPa	N/A	N/A	N/A
Duration	Day(s)	0.5	0.5	0.5
Final Moisture Content	%	22.7	22.5	22.5
Final Wet Density	mg/m^3	1.88	1.85	1.90
Final Dry Density	mg/m^3	1.53	1.51	1.55

PEAK SHEAR STRESS PARAMETERS

Apparent Cohesion C'	kPa	0
Angle of Shearing Resistance phi '	Deg	32°

RESIDUAL PARAMETERS

Apparent Cohesion C'	kPa	N/A
Angle of Shearing Resistance phi 'r	Deg	N/A

REMARKS:

DATE TESTED 01/10/2021
DATE OF ISSUE 15/10/2021

NAME Michelle Selkirk
APPROVED BY [redacted]

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Consolidated Drained Shear Box Test

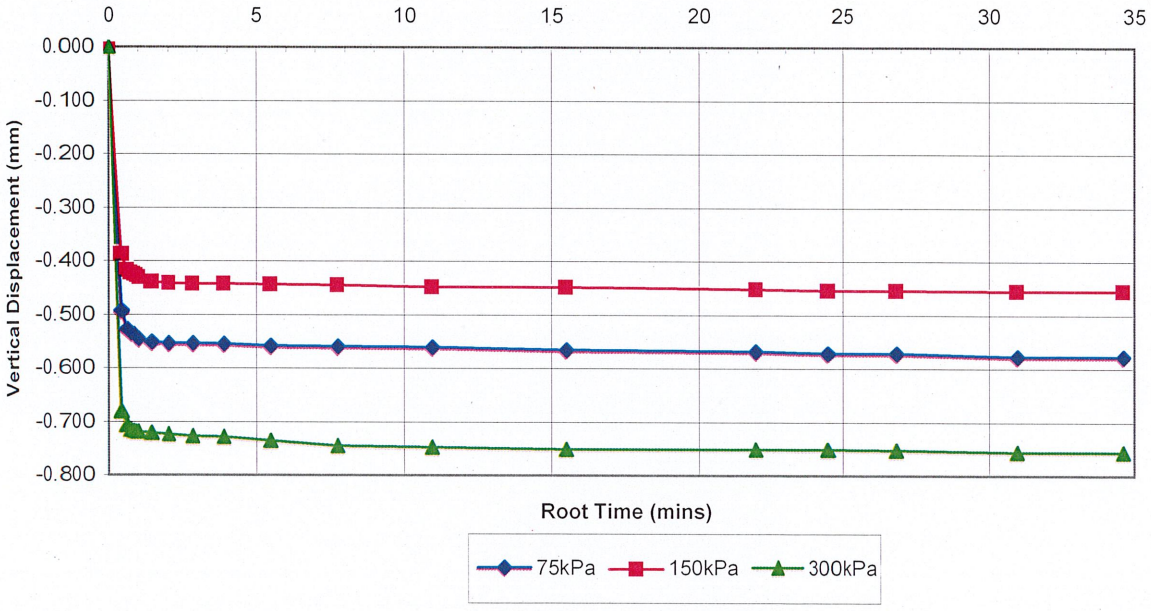
BS 1377 : PART 7 : 1990 Clause 4

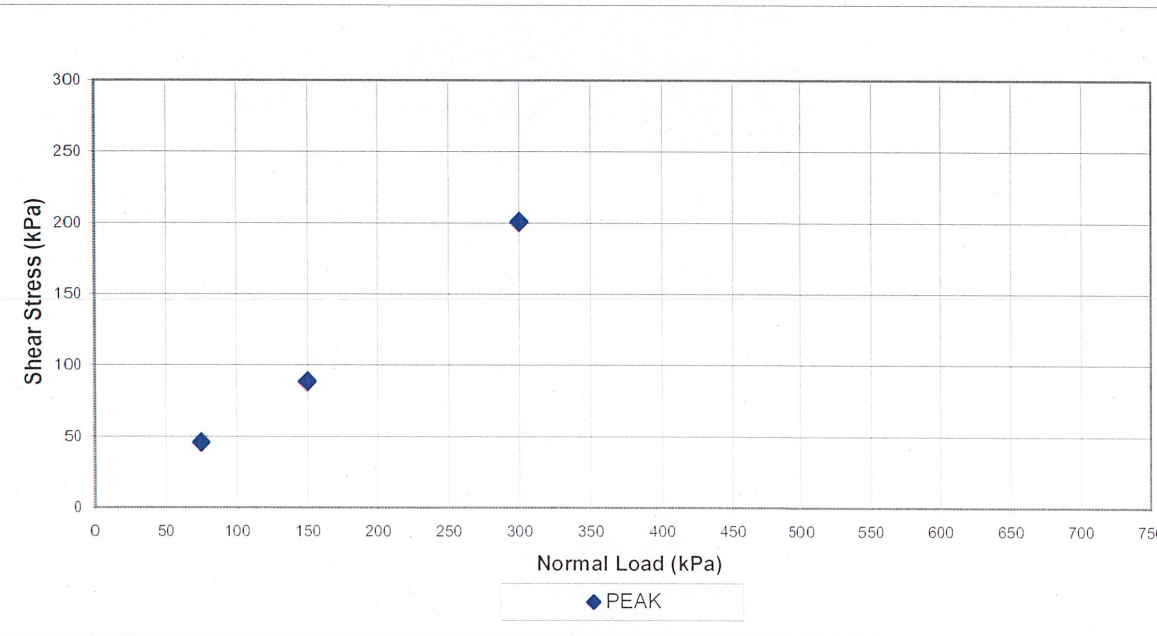
(Specimen(s) Tested Submerged)

Site: Preliminary Onshore Ground Investigation for NZT

Client: AECOM **Job No:** 4339

Borehole: MS\BH17 **Sample:** B31 **Depth:** 7.95 m.





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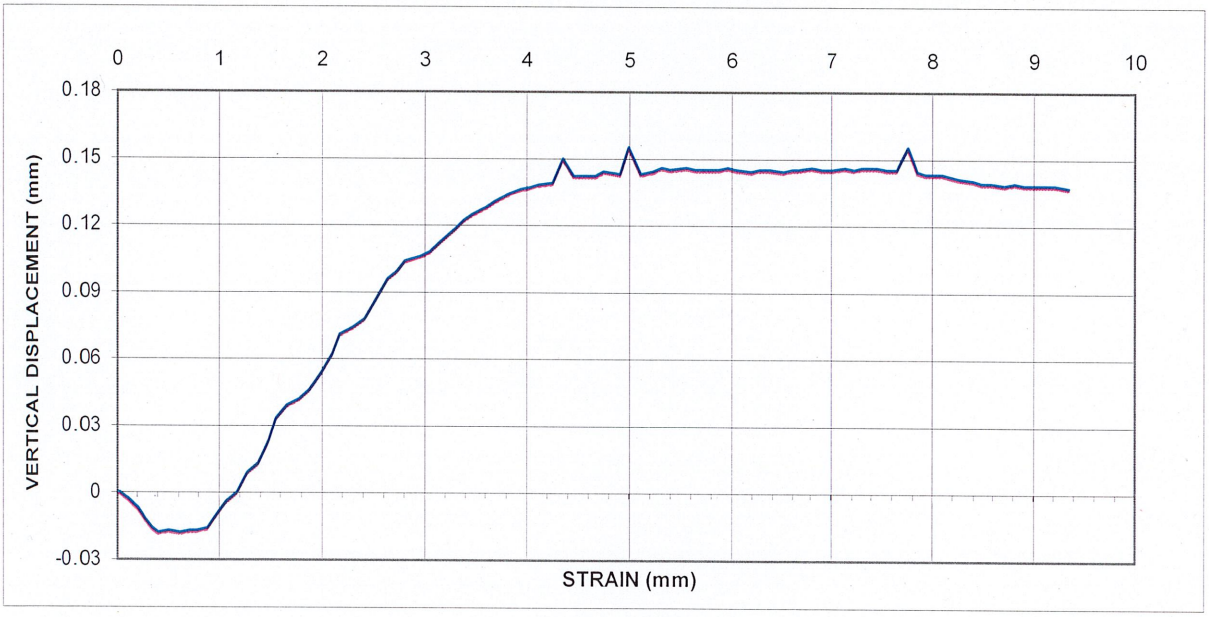
BS 1377 : PART 7 : 1990 Clause 4

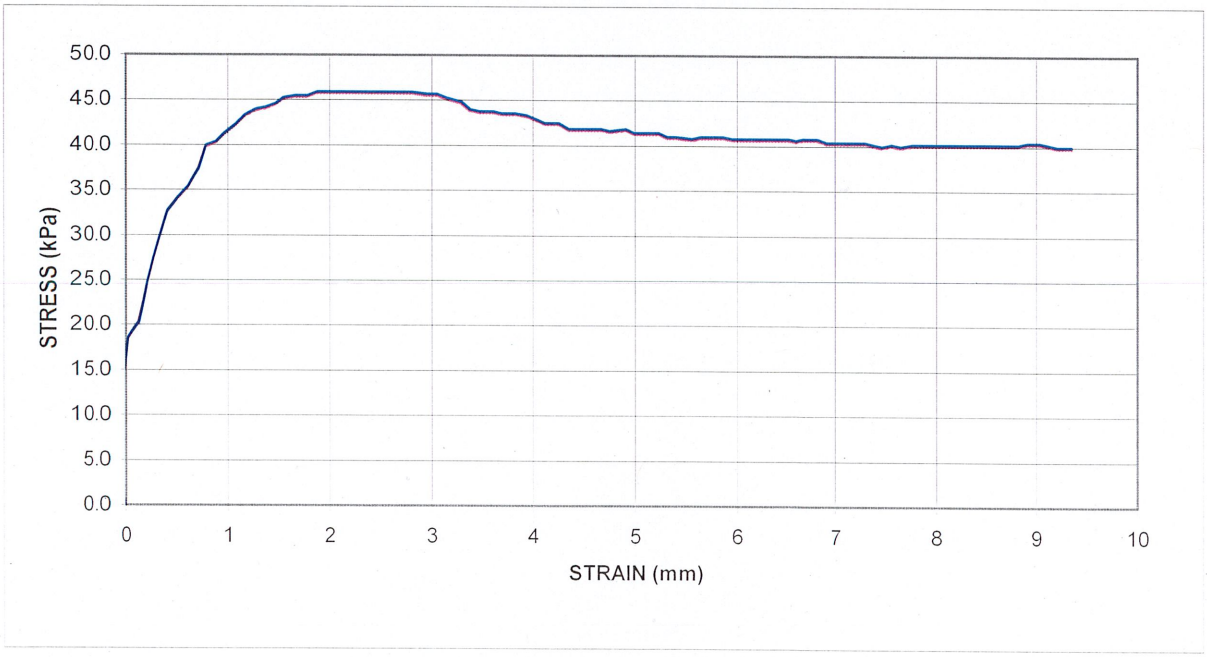
(Specimen(s) Tested Submerged)

Site: Preliminary Onshore Ground Investigation for NZT
Client: AECOM **Job No.:** 4339

Borehole: MS\BH17 **Sample:** B31 **Depth:** 7.95 m.

Stage Number 1 **Pressure** 75 kPa





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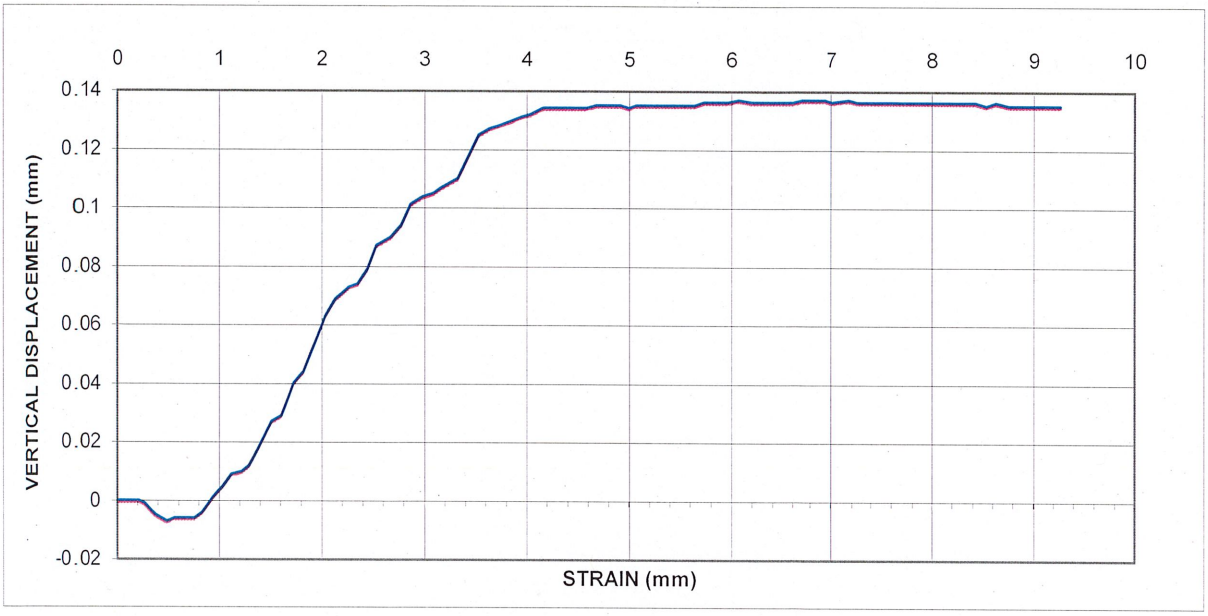
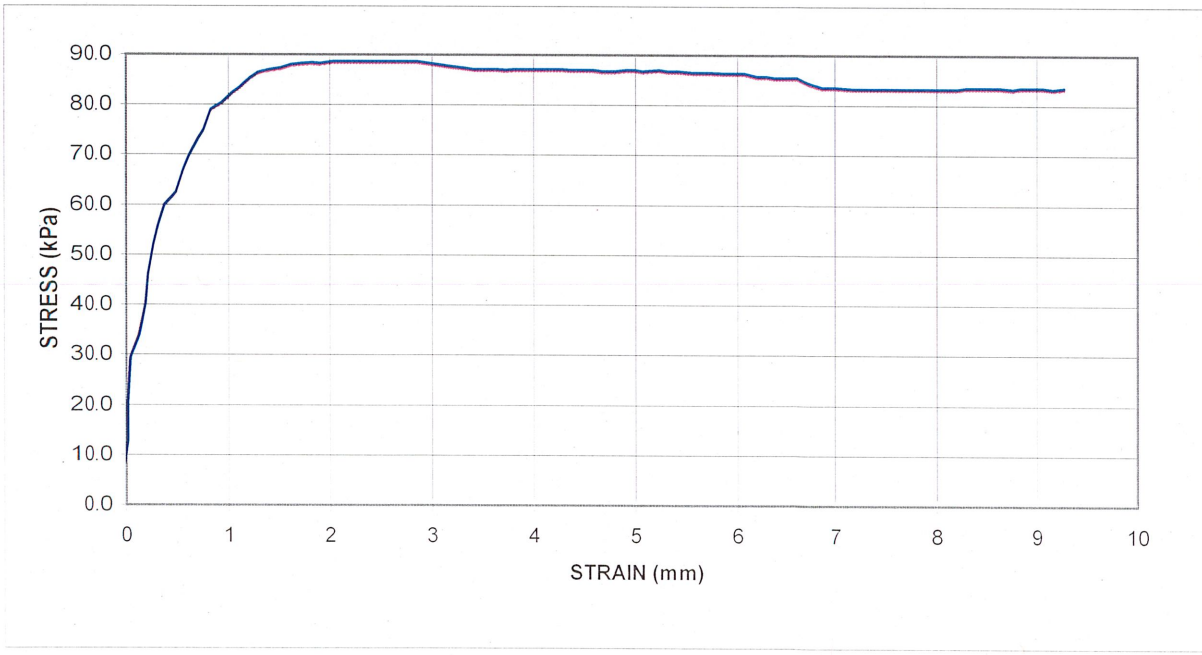
(Specimen(s) Tested Submerged)

Site: Preliminary Onshore Ground Investigation for NZT
Client: AECOM **Job No.:** 4339

Borehole: MS\BH17 **Sample:** B31 **Depth:** 7.95 m.

Stage Number 2 **Pressure** 150 kPa





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BS 1377 : PART 7 : 1990 Clause 4

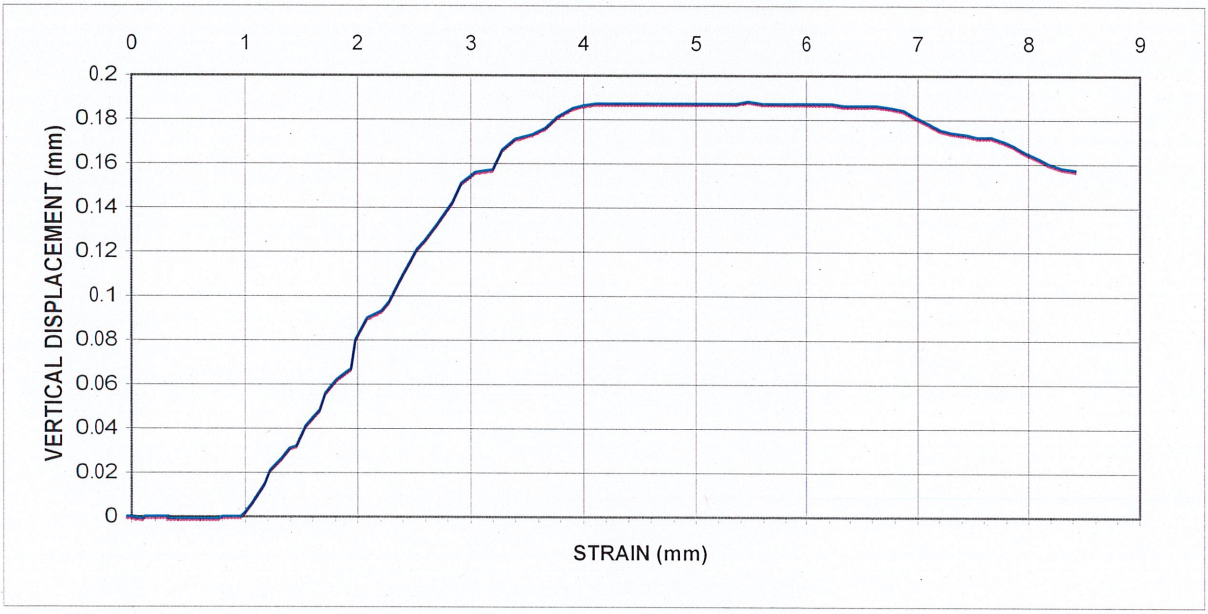
(Specimen(s) Tested Submerged)

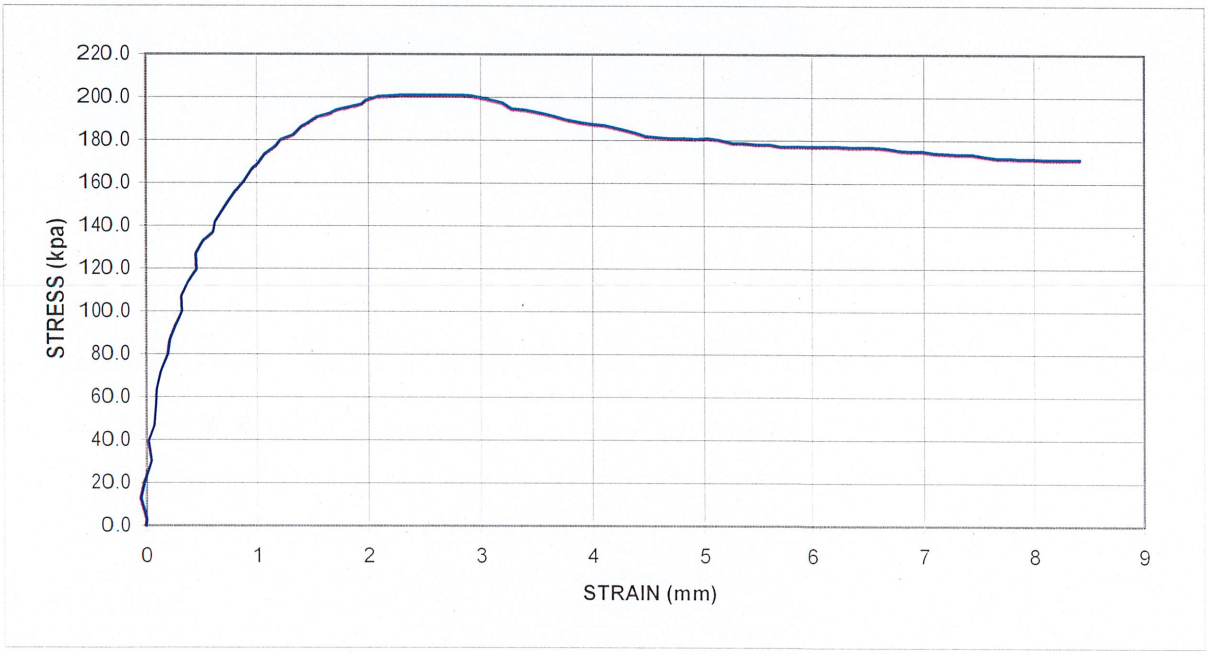
Site: Preliminary Onshore Ground Investigation for NZT

Client: AECOM **Job No.:** 4339

Borehole: MS\BH17 **Sample:** B31 **Depth:** 7.95 m.

Stage Number 3 **Pressure** 300 kPa





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BS 1377 : PART 7 : 1990 Clause 4

(Specimen(s) Tested Submerged)

Site: Preliminary Onshore Ground Investigation for NZT

Client: AECOM **Job No.** 4339

Borehole: MS\TP07 **Sample:** B17 **Depth:** 3.40 m

For sample description please refer to sample description sheet

Stage Number		**1**	**2**	**3**
Specific Depth	m.	N/A	N/A	N/A
Length	mm	60.0	60.0	60.0
Height	mm	24.7	25.5	25.1
Initial Moisture Content	%	14.0	14.0	14.0
Initial Wet density	mg/m^3	1.36	1.33	1.33
Initial Dry density	mg/m^3	1.19	1.17	1.16
Particle Density (Assumed)	mg/m^3	2.65	2.65	2.65
CONSOLIDATION				
Normal Stress	kPa	65	130	260
Height at end of Stage	mm	24.0	23.7	22.1
Duration	Day(s)	0.5	0.5	1.0
SHEARING				
Rate of Strain	mm/min	0.112	0.111	0.109
Peak Shear Stress	kPa	22.8	74.9	169.0
Displacement at Peak Stress	mm	5.96	6.41	8.79
Rate for Residual Runs	mm/min	N/A	N/A	N/A
Residual Shear Stress	kPa	N/A	N/A	N/A
Duration	Day(s)	0.5	0.5	0.5
Final Moisture Content	%	34.4	32.9	31.7
Final Wet Density	mg/m^3	1.65	1.67	1.74
Final Dry Density	mg/m^3	1.23	1.25	1.32

PEAK SHEAR STRESS PARAMETERS

Apparent Cohesion C'	kPa	0
Angle of Shearing Resistance phi '	Deg	30°

RESIDUAL PARAMETERS

Apparent Cohesion C'	kPa	N/A
Angle of Shearing Resistance phi 'r	Deg	N/A

REMARKS: Material removed prior to test = 88%

DATE TESTED 29/09/2021 **NAME** Michelle Selkirk

DATE OF ISSUE 15/10/2021 **APPROVED BY** [redacted]

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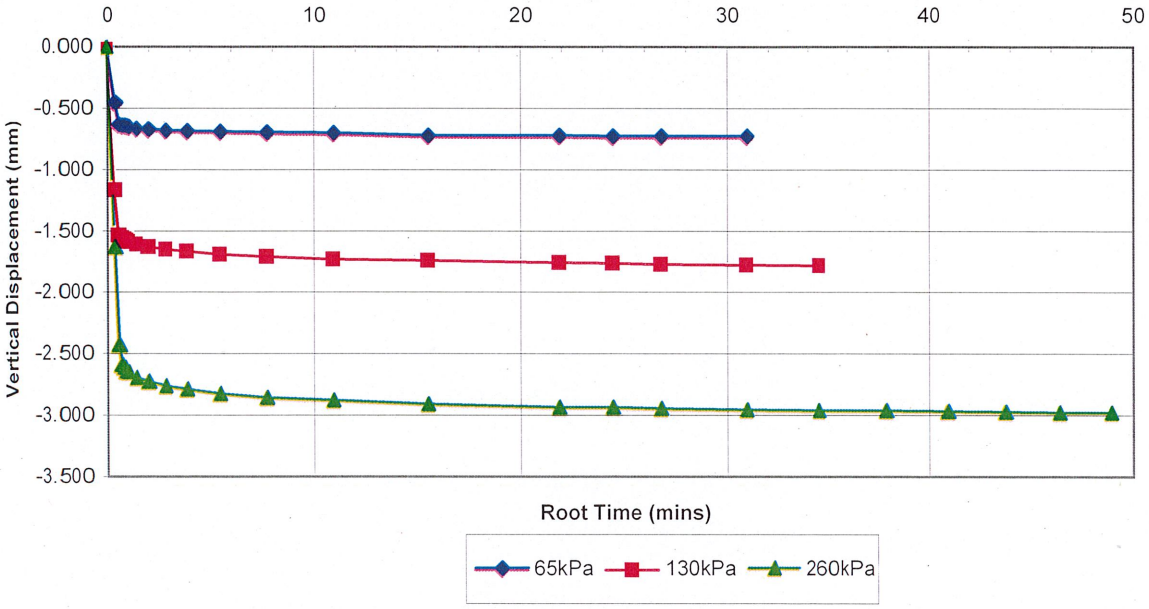
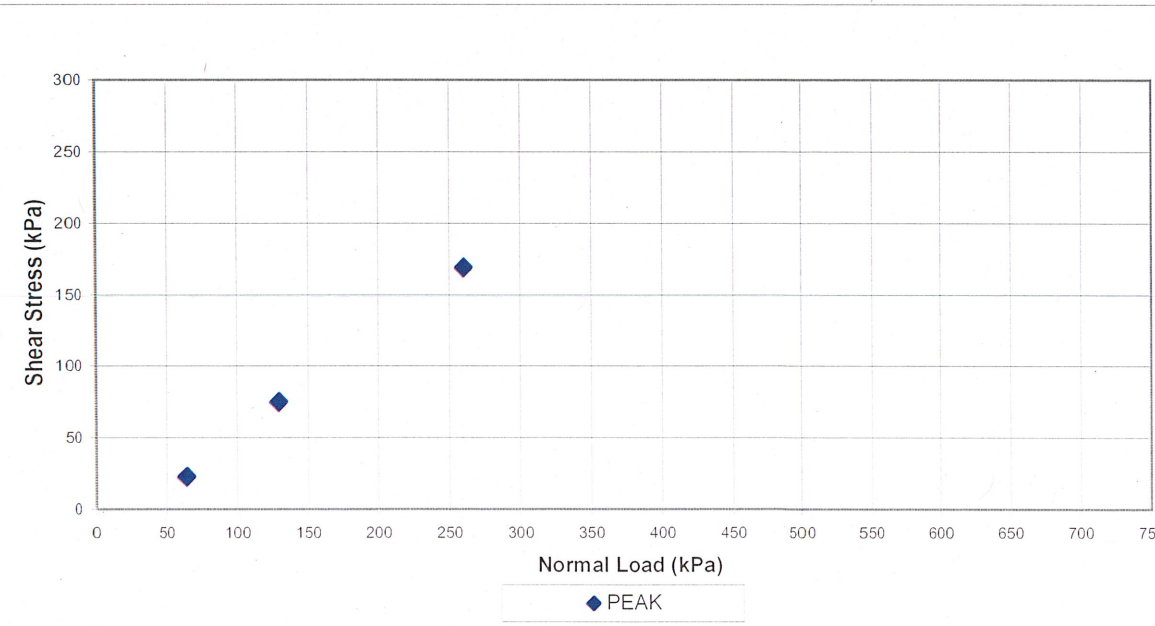
(Specimen(s) Tested Submerged)

Site: Preliminary Onshore Ground Investigation for NZT

Client: AECOM **Job No.** 4339

Borehole: MS\TP07 **Sample:** B17 **Depth:** 3.40 m.





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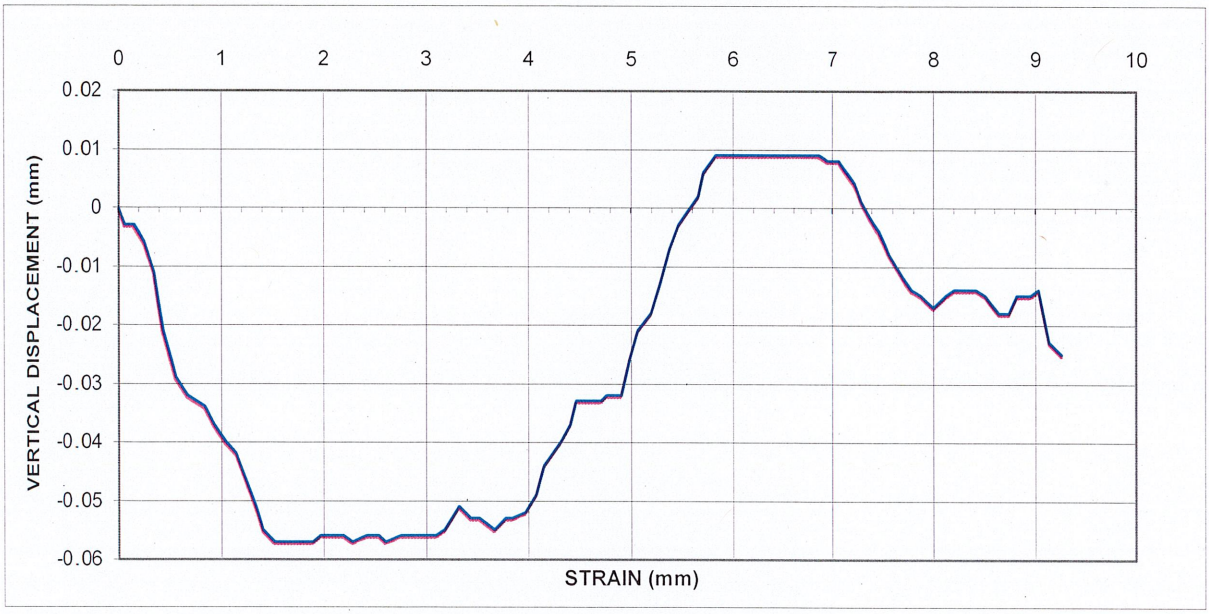
BS 1377 : PART 7 : 1990 Clause 4

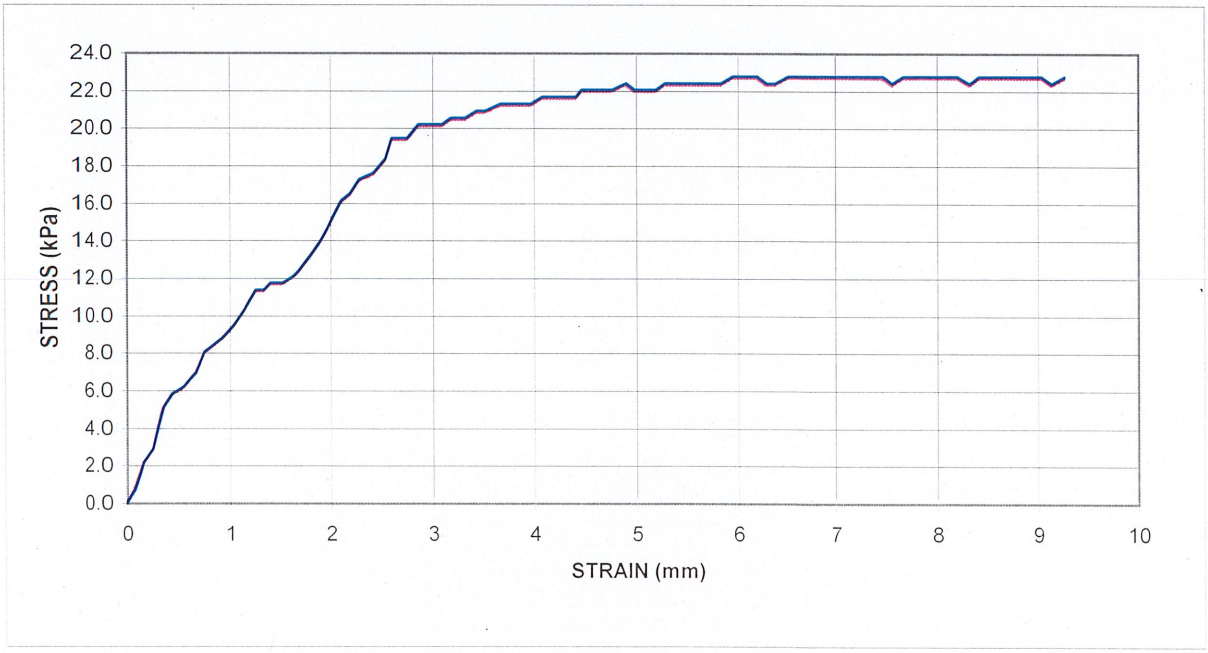
(Specimen(s) Tested Submerged)

Site: Preliminary Onshore Ground Investigation for NZT
Client: AECOM **Job No.:** 4339

Borehole: MS\TP07 **Sample:** B17 **Depth:** 3.40 m.

Stage Number 1 **Pressure** 65 kPa





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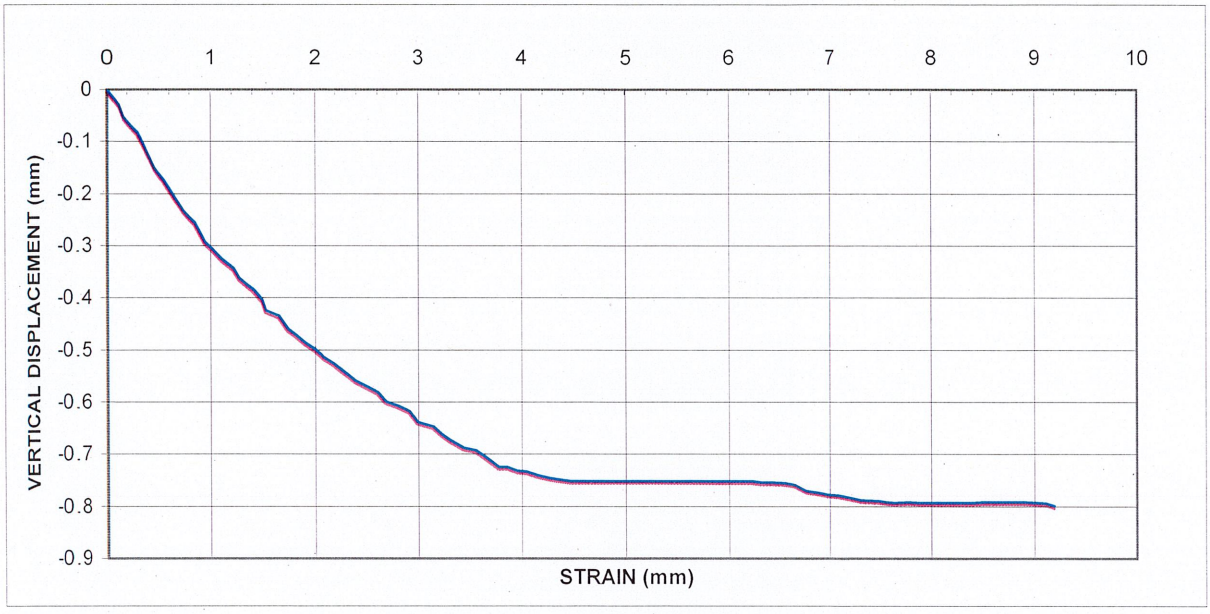
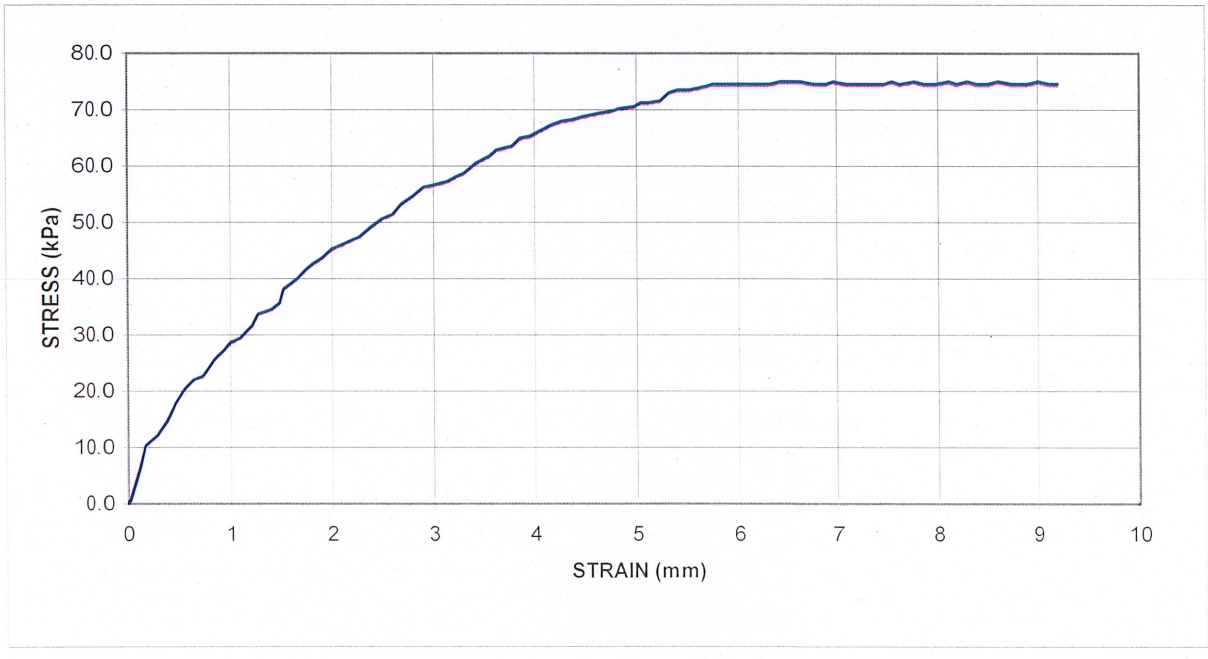
(Specimen(s) Tested Submerged)

Site: Preliminary Onshore Ground Investigation for NZT
Client: AECOM **Job No.:** 4339

Borehole: MS\TP07 **Sample:** B17 **Depth:** 3.40 m.

Stage Number 2 **Pressure** 130 kPa





ALLIED EXPLORATION AND GEOTECHNICS LIMITED

Unit 25 Stella Gill Industrial Estate, Pelton Fell

Chester-le-Street, Co.Durham. DH2 2RG

a UKAS LABORATORY Testing No. 1367

UKAS TESTING

1367

Consolidated Drained Shear Box Test

BS 1377 : PART 7 : 1990 Clause 4

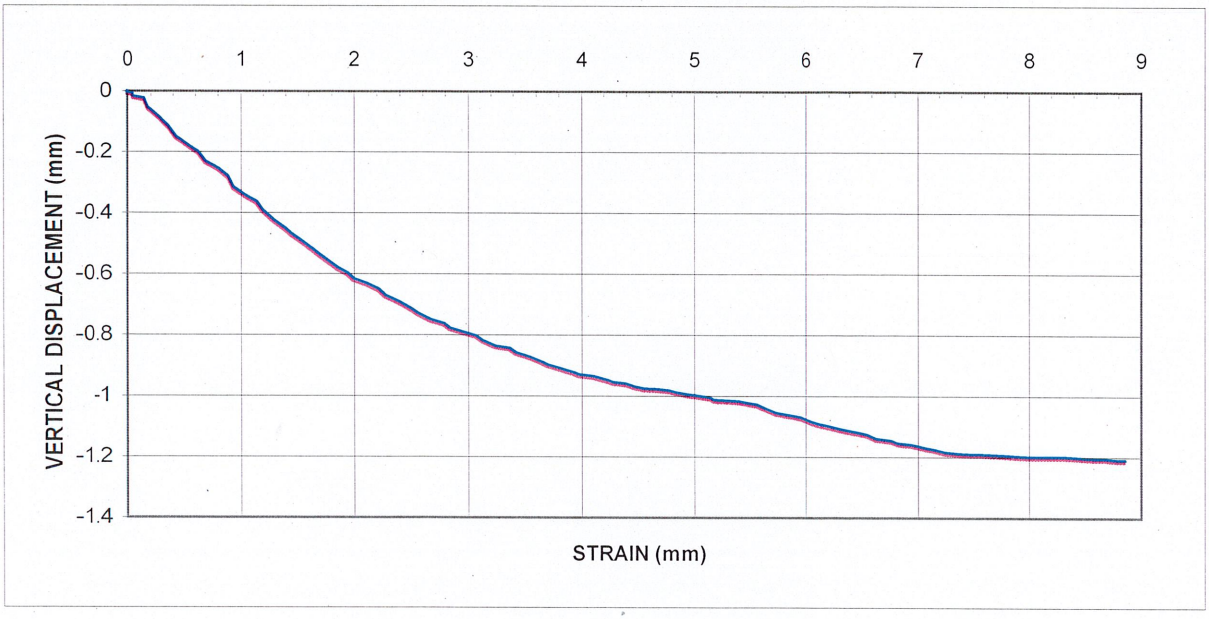
(Specimen(s) Tested Submerged)

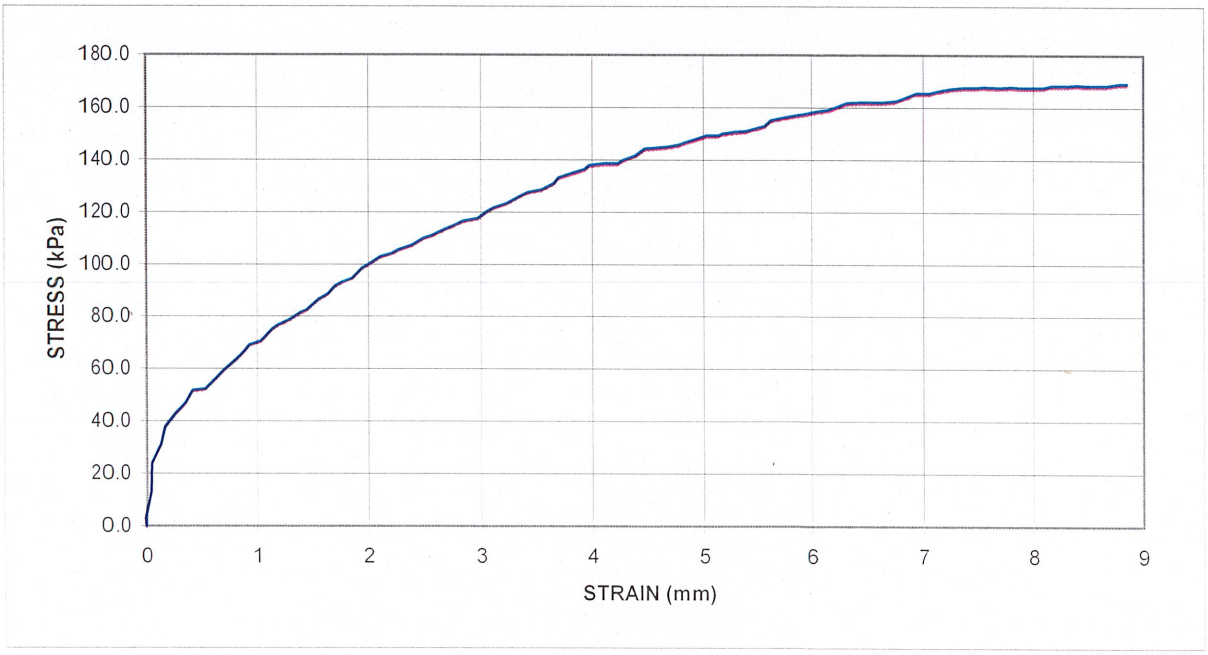
Site: Preliminary Onshore Ground Investigation for NZT

Client: AECOM **Job No.:** 4339

Borehole: MS\TP07 **Sample:** B17 **Depth:** 3.40 m.

Stage Number 3 **Pressure** 260 kPa





Undrained Shear Strength in Triaxial Cell without Pore Water Pressure Measurement

LABORATORY TESTING ENCLOSURE 12

ALLIED EXPLORATION & GEOTECHNICS LIMITED

Head Office: Unit 25 Stella Gill Industrial Estate, Pelton Fell, Chester-le-Street, Co. Durham, DH2 2RG - **Tel:** 0191 387 4700 **Fax:** 0191 387 4710
Regional Office: Unit 20, Business Development Centre, Eanam Wharf, Blackburn, BB1 5BL - **Tel:** 01772 735 300 **Fax:** 01772 735 999

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION WITHOUT MEASUREMENT OF PORE PRESSURE

BS 1377 : Part 7 : Clauses 8 & 9 : 1990 Part 2 Clause 3.2

Exploratory Hole	Sample ID Depth (m)	Sample ID Type	Specific Depth (m)	Diameter (mm)	Length (mm)	Prep. Method	Stage No.	Initial Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Membrane Thickness (mm)	Membrane Correction (kPa)	Cell Pressure (kPa)	Corrected Deviator Stress (kPa)	Failure Strain (%)	Mode of Failure	cu (kPa)	Date Tested
LF\BH01	17.60	U54	17.65	103.3	212.2	UNDISTURBED	1	27	2.01	1.58	0.3	0.92	355	100	16.0	C	50	31/08/2021
LF\BH01	20.75	U59	20.75	101.9	201.2	UNDISTURBED	1	21	2.09	1.73	0.4	1.08	415	331	13.0	C	165	10/08/2021
LF\BH01	26.60	U74	26.65	101.2	194.5	UNDISTURBED	1	20	2.11	1.75	0.3	0.79	530	211	12.5	BR	106	31/08/2021
LF\BH02	26.50	U75	26.52	102.4	210.6	UNDISTURBED	1	16	2.22	1.91	0.4	1.48	530	387	20.0	C	193	16/08/2021
MS\BH02	11.70	UT1	11.83	103.5	209.9	UNDISTURBED	1	29	1.94	1.51	0.3	1.10	235	85	20.0	P	43	16/08/2021
MS\BH02	23.00	U77	23.03	101.2	211.1	UNDISTURBED	1	17	2.18	1.87	0.3	1.13	460	463	20.0	C	232	18/08/2021
MS\BH04	16.30	U44	16.40	101.4	211.1	UNDISTURBED	1	18	2.11	1.78	0.3	0.30	325	398	19.0	BR	199	18/08/2021
MS\BH05	16.00	U1	16.00	104.0	179.1	UNDISTURBED	1	21	2.07	1.71	0.4	1.46	325	218	20.0	C	109	09/08/2021
MS\BH06	16.30	C1	16.62	101.6	210.9	UNDISTURBED	1	23	1.99	1.62	0.3	1.05	330	202	18.5	BR	101	25/08/2021
MS\BH07	16.20	UT2	16.23	102.4	210.8	UNDISTURBED	1	24	2.09	1.69	0.4	1.48	325	304	20.0	C	152	16/08/2021
MS\BH07	18.10	U59	18.35	100.0	191.1	UNDISTURBED	1	20	2.07	1.73	0.3	0.97	360	226	16.5	C	113	16/08/2021
MS\BH07	21.90	U69	21.91	101.8	210.7	UNDISTURBED	1	15	2.26	1.97	0.3	0.58	440	277	8.5	C	138	18/08/2021
MS\BH08	8.70	UT1	8.90	102.7	209.0	UNDISTURBED	1	33	1.93	1.45	0.3	0.44	180	25	6.0	C	12	06/08/2021
MS\BH08	14.70	UT2	14.90	103.9	205.6	UNDISTURBED	1	29	2.00	1.55	0.3	0.70	295	35	11.0	P	18	06/08/2021
MS\BH08	20.35	U59	20.35	100.6	210.4	UNDISTURBED	1	24	2.07	1.67	0.3	0.62	410	383	9.0	C	191	06/08/2021

For description of sample please refer to the Laboratory Sample Description Sheet. Please note the rate of strain was 2% per minute and the orientation of the test specimen was vertical. Latex membrane used.

Date of issue :- 02/09/2021	Certificate No :- TXL/4339/1	Signed :- [redacted]	Name :- M. SELKIRK	Page 1 of 2
Client :- AECOM	Contract Title :- Preliminary Onshore Ground Investigation for NZT			AEG Contract No :- 4339

UKAS TESTING 1367

ALLIED EXPLORATION & GEOTECHNICS LIMITED

Head Office: Unit 25 Stella Gill Industrial Estate, Pelton Fell, Chester-le-Street, Co. Durham, DH2 2RG - **Tel:** 0191 387 4700 **Fax:** 0191 387 4710
Regional Office: Unit 20, Business Development Centre, Eanam Wharf, Blackburn, BB1 5BL - **Tel:** 01772 735 300 **Fax:** 01772 735 999

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION WITHOUT MEASUREMENT OF PORE PRESSURE

BS 1377 : Part 7 : Clauses 8 & 9 : 1990 Part 2 Clause 3.2

Exploratory Hole	Sample ID Depth (m)	Sample ID Type	Specific Depth (m)	Diameter (mm)	Length (mm)	Prep. Method	Stage No.	Initial Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Membrane Thickness (mm)	Membrane Correction (kPa)	Cell Pressure (kPa)	Corrected Deviator Stress (kPa)	Failure Strain (%)	Mode of Failure	cu (kPa)	Date Tested
MS\BH08	24.35	U67	24.36	103.3	211.0	UNDISTURBED	1	13	2.29	2.03	0.3	0.55	490	225	8.0	BR	113	16/08/2021
MS\BH09	15.70	U57	15.82	102.3	211.0	UNDISTURBED	1	22	2.00	1.64	0.3	1.11	315	219	20.0	C	110	18/08/2021
MS\BH10	17.25	U44	17.44	100.1	210.8	UNDISTURBED	1	20	2.08	1.73	0.4	0.59	345	420	6.0	BR	210	18/08/2021
MS\BH11	13.20	UT1	13.37	102.9	206.5	UNDISTURBED	1	29	2.05	1.60	0.4	0.96	260	44	17.0	C	22	06/08/2021
MS\BH11	17.55	U55	17.60	101.1	211.7	UNDISTURBED	1	18	2.14	1.82	0.3	1.06	355	383	18.5	C	191	09/08/2021
MS\BH12	16.20	UT1	16.25	104.1	201.0	UNDISTURBED	1	35	1.99	1.47	0.3	0.68	320	28	10.5	P	14	06/08/2021
MS\BH13	5.70	UT1	5.76	101.9	211.3	UNDISTURBED	1	40	1.84	1.32	0.4	1.27	115	52	16.5	P	26	16/08/2021
MS\BH13	12.80	U46	12.83	99.5	211.1	UNDISTURBED	1	27	2.01	1.58	0.3	0.55	260	170	7.5	BR	85	16/08/2021
MS\BH14	15.05	U54	15.10	101.7	210.7	UNDISTURBED	1	23	2.06	1.68	0.3	0.85	300	310	14.0	BR	155	18/08/2021
MS\BH14	16.62	U59	16.63	101.7	210.5	UNDISTURBED	1	17	2.18	1.86	0.3	1.12	335	381	20.0	C	191	18/08/2021
MS\BH15	17.70	UT2	17.75	102.2	211.0	UNDISTURBED	1	31	1.92	1.47	0.3	0.69	355	150	10.5	BR	75	16/08/2021
MS\BH16	14.70	UT1	14.79	101.7	210.9	UNDISTURBED	1	24	2.05	1.66	0.4	1.08	295	221	13.0	C	111	16/08/2021
MS\BH17	14.70	UT1	14.85	102.7	209.7	UNDISTURBED	1	35	1.90	1.41	0.3	1.11	295	51	20.0	P	25	16/08/2021
MS\BH17	17.70	UT2	17.75	98.2	211.2	UNDISTURBED	1	24	2.03	1.64	0.3	1.16	355	315	20.0	C	157	16/08/2021

For description of sample please refer to the Laboratory Sample Description Sheet. Please note the rate of strain was 2% per minute and the orientation of the test specimen was vertical. Latex membrane used.

Date of issue :-	Certificate No :-	Signed :-	Name :-	Page 2 of 2
02/09/2021	TXL/4339/2	[redacted]	M. SELKIRK	

Client :-	Contract Title :-	AEG Contract No :-
AECOM	Preliminary Onshore Ground Investigation for NZT	4339

UKAS TESTING 1367

Consolidated Undrained Shear Strength in Triaxial Cell with Measurement of Pore Water Pressure

LABORATORY TESTING ENCLOSURE 13

ALLIED EXPLORATION AND GEOTECHNICS LIMITED

Unit 25 Stella Gill Industrial Estate,
Pelton Fell, Chester le Street, DH2 2RG.

CONSOLIDATED UNDRAINED TRIAXIAL WITH MEASUREMENT OF PORE WATER PRESSURE

B.S. 1377 : Part 8 : 1990 : Clauses 3,4,5,6 and 7

PROJECT No : 4339 **CLIENT : AECOM**

PROJECT : Preliminary Onshore Ground Investigation for NZT

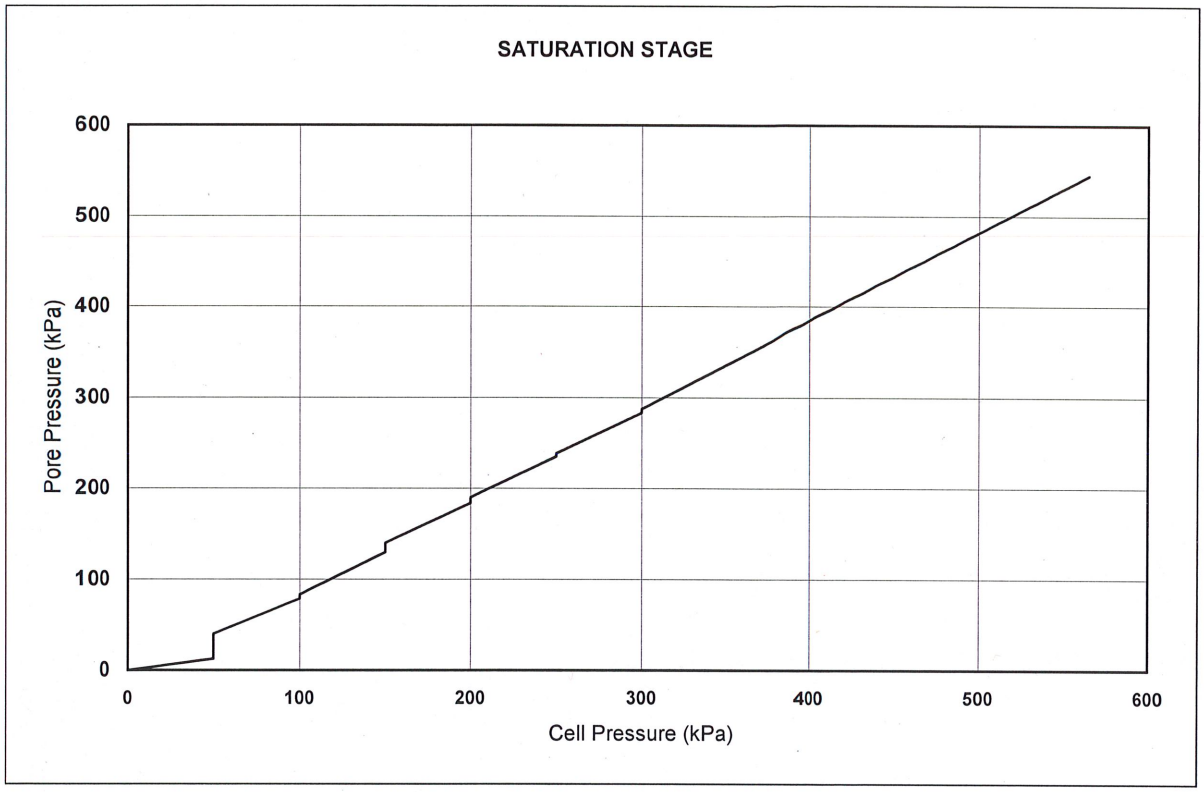
HOLE : LF\BH01 **SAMPLE No : U63** **DEPTH (m) : 22.70**

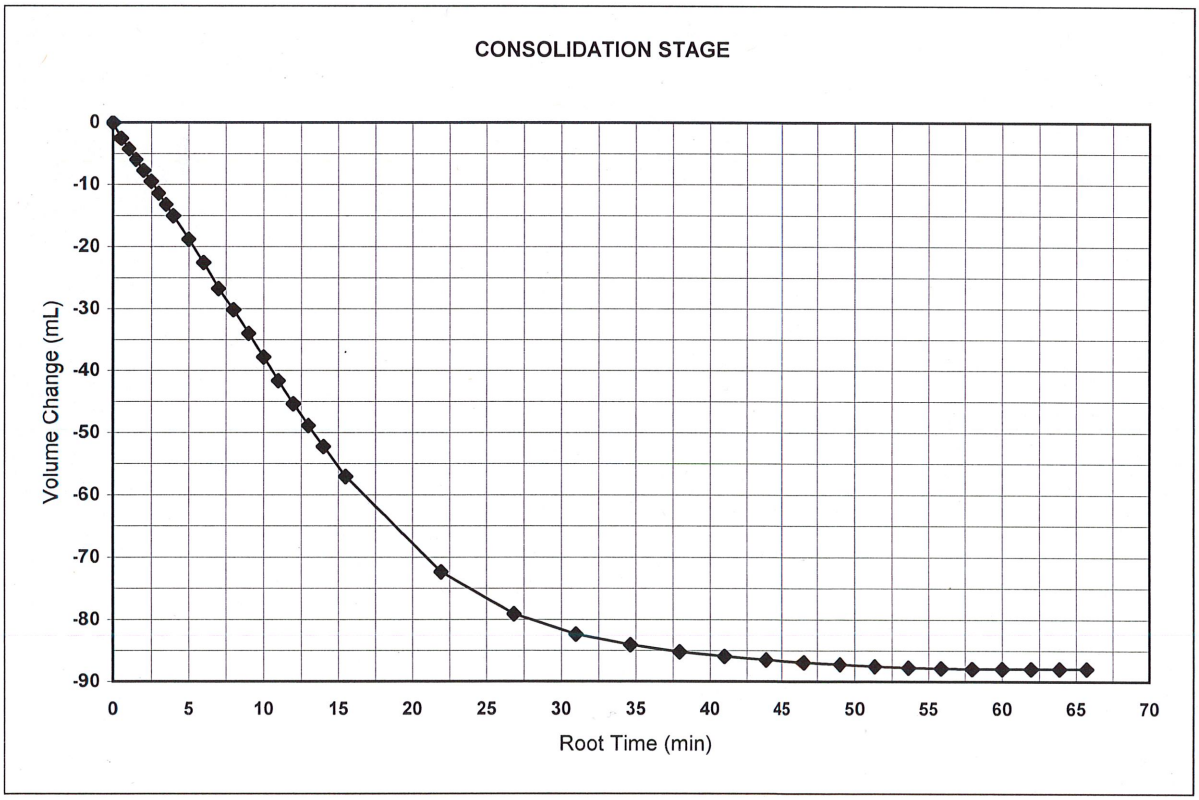
TEST SPECIMEN PREPARATION	Undisturbed	
Specific Depth (m)	: 22.72	
Orientation within original sample	: Vertical	
Description	: Please refer to sample description sheet.	
TEST SPECIMEN DETAILS	*Stage*	1
Length	*mm*	200.5
Diameter	*mm*	103.3
Moisture Content	*%*	21.8
Bulk Density	*Mg/m^3*	2.08
SATURATION STAGE		
Drainage Conditions	: Both ends and radial boundary	
Final Cell Pressure	*kPa*	565
Final Pore Pressure	*kPa*	545.3
Final Pore Pressure Parameter B		0.97
Duration	*day(s)*	2
CONSOLIDATION STAGE		
Cell Pressure	*kPa*	565
Back Pressure	*kPa*	300
Effective Pressure	*kPa*	265
Final Pore Pressure	*kPa*	306.9
Duration	*day(s)*	3
SHEARING STAGE		
Cell Pressure	*kPa*	565
Rate of Axial Displacement	*mm/min*	0.0081
Final Moisture Content	*%*	20.6
Final Bulk Density	*Mg/m^3*	2.06
CONDITIONS AT FAILURE	*Criterion*	Maximum stress ratio
Pore Pressure	*kPa*	395
Minor Effective Principal Stress	*kPa*	170
Deviator Stress	*kPa*	220
Major Effective Principal Stress	*kPa*	390
Effective Principal Stress Ratio		2.30
Pore Pressure Parameter A		0.40
Axial Strain	*%*	10.3
Correction applied to Principal Stress	*kPa*	5.2
Duration	*Days*	3

PROJECT No : 4339 **CLIENT : AECOM**

PROJECT : Preliminary Onshore Ground Investigation for NZT

HOLE : LF\BH01 **SAMPLE No : U63** **DEPTH (m) : 22.70**

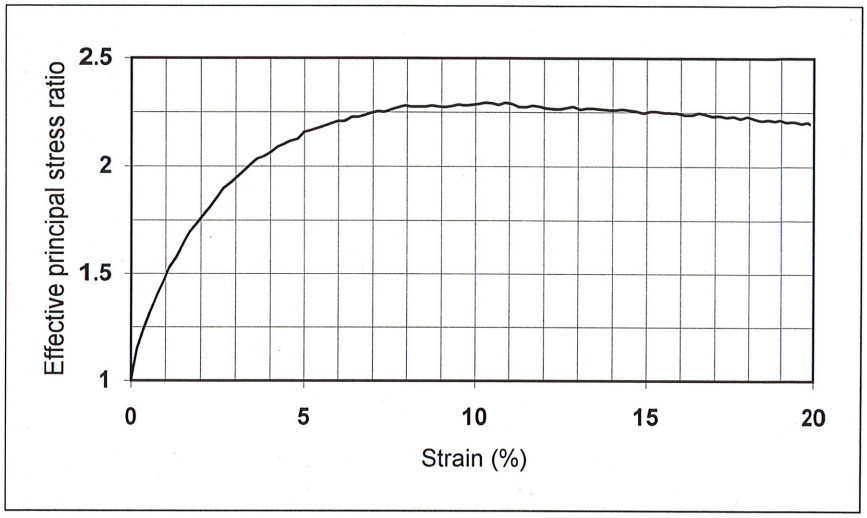




PROJECT No : 4339 **CLIENT : AECOM**

PROJECT : Preliminary Onshore Ground Investigation for NZT

HOLE : LF\BH01 **SAMPLE No : U63** **DEPTH (m) : 22.70**

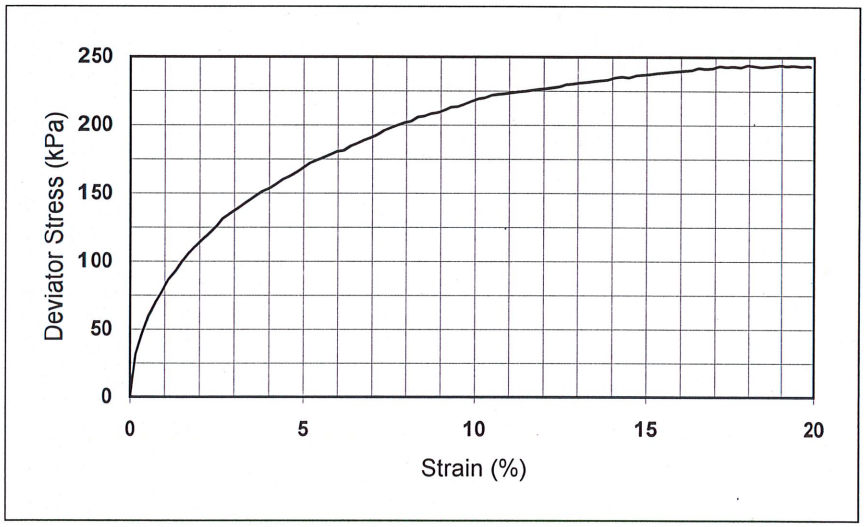


Failure Conditions

Specimen 1

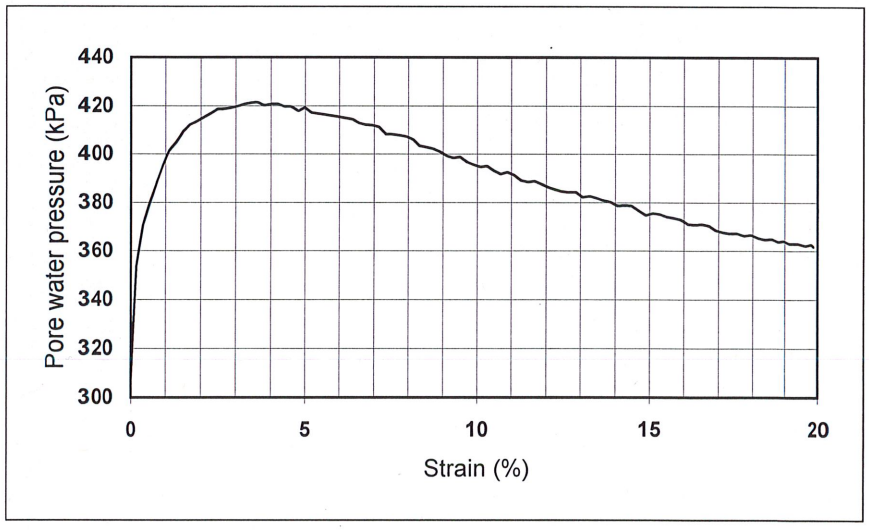
At maximum stress ratio

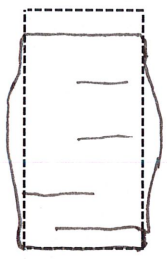
strain	10.29	%
deviator stress	220.1	*kPa*
stress ratio	2.30	



At maximum deviator stress

strain	18.96	%
deviator stress	244.3	*kPa*
stress ratio	2.22	



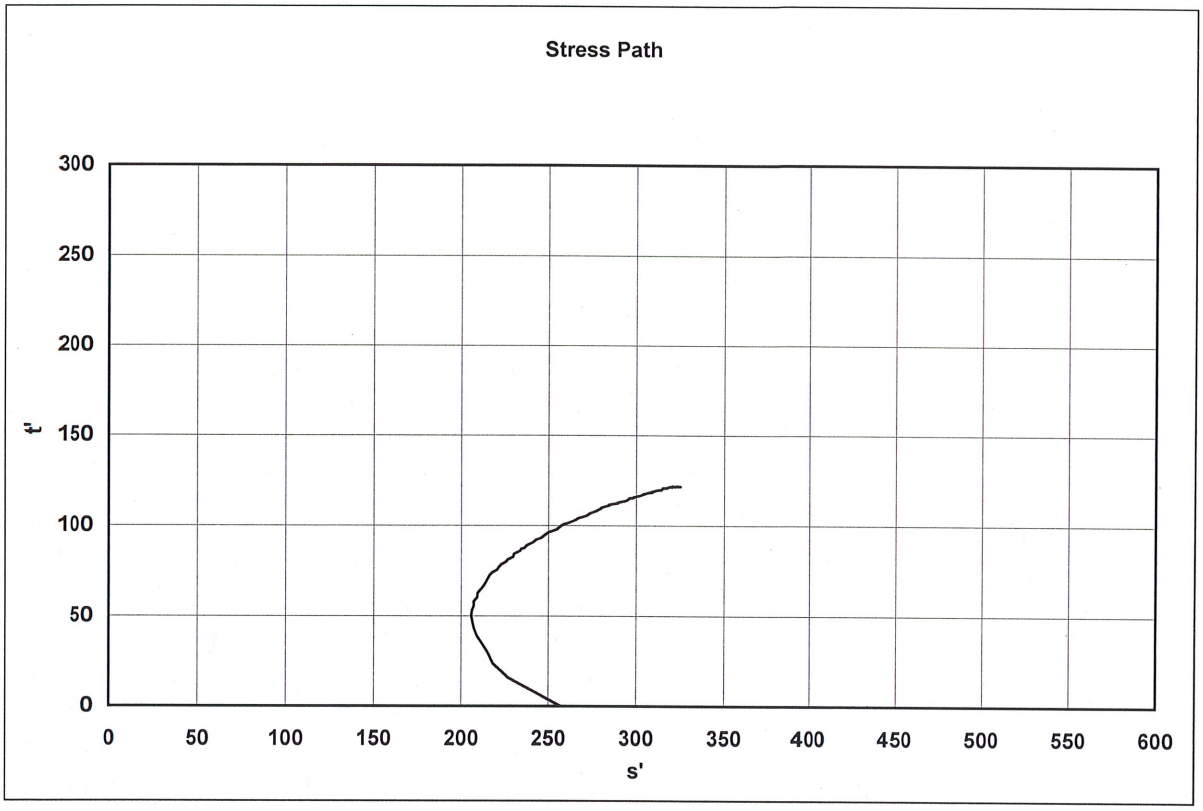


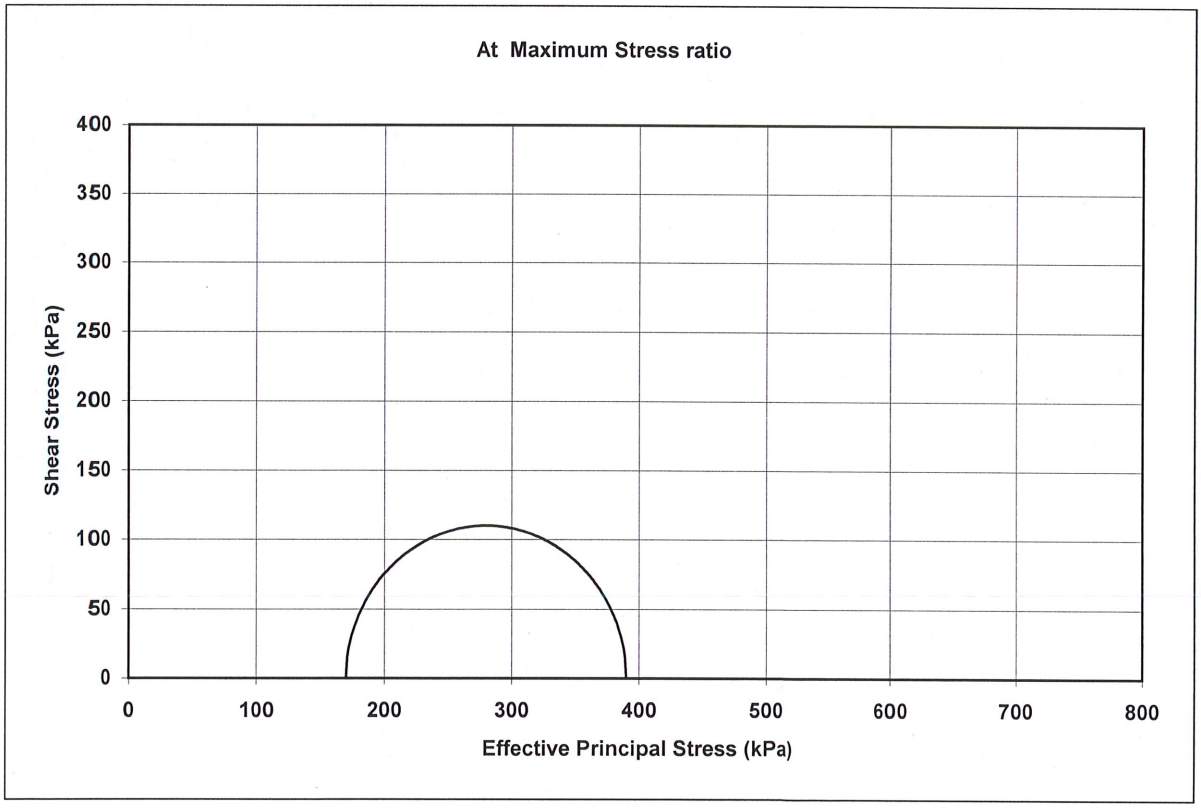
FAILURE MODE

PROJECT No : 4339 CLIENT : AECOM

PROJECT : Preliminary Onshore Ground Investigation for NZT

HOLE : LF\BH01 SAMPLE No : U63 DEPTH (m) : 22.70





ALLIED EXPLORATION AND GEOTECHNICS LIMITED

Unit 25 Stella Gill Industrial Estate,
Pelton Fell, Chester le Street, DH2 2RG.

CONSOLIDATED UNDRAINED TRIAXIAL WITH MEASUREMENT OF PORE WATER PRESSURE

B.S. 1377 : Part 8 : 1990 : Clauses 3,4,5,6 and 7

PROJECT No : 4339 **CLIENT : AECOM**

PROJECT : Preliminary Onshore Ground Investigation for NZT

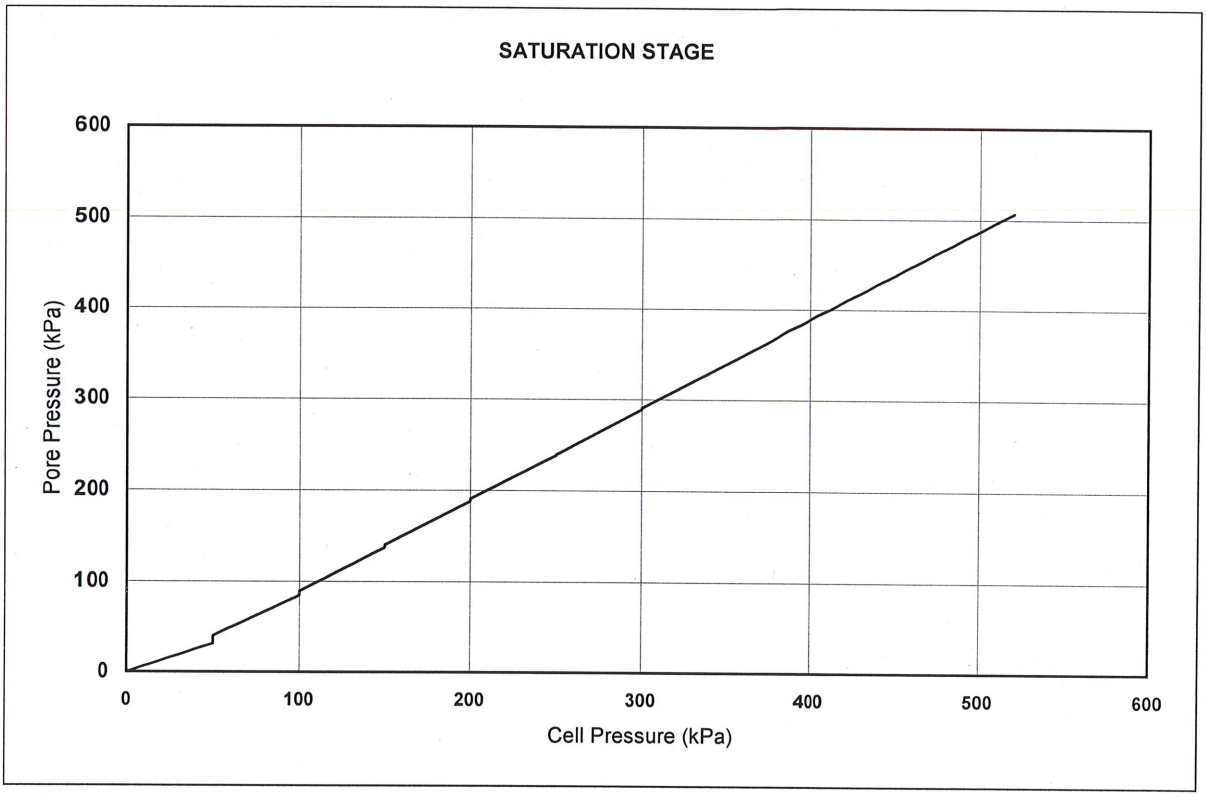
HOLE : LF\BH02 **SAMPLE No : U53** **DEPTH (m) : 17.40**

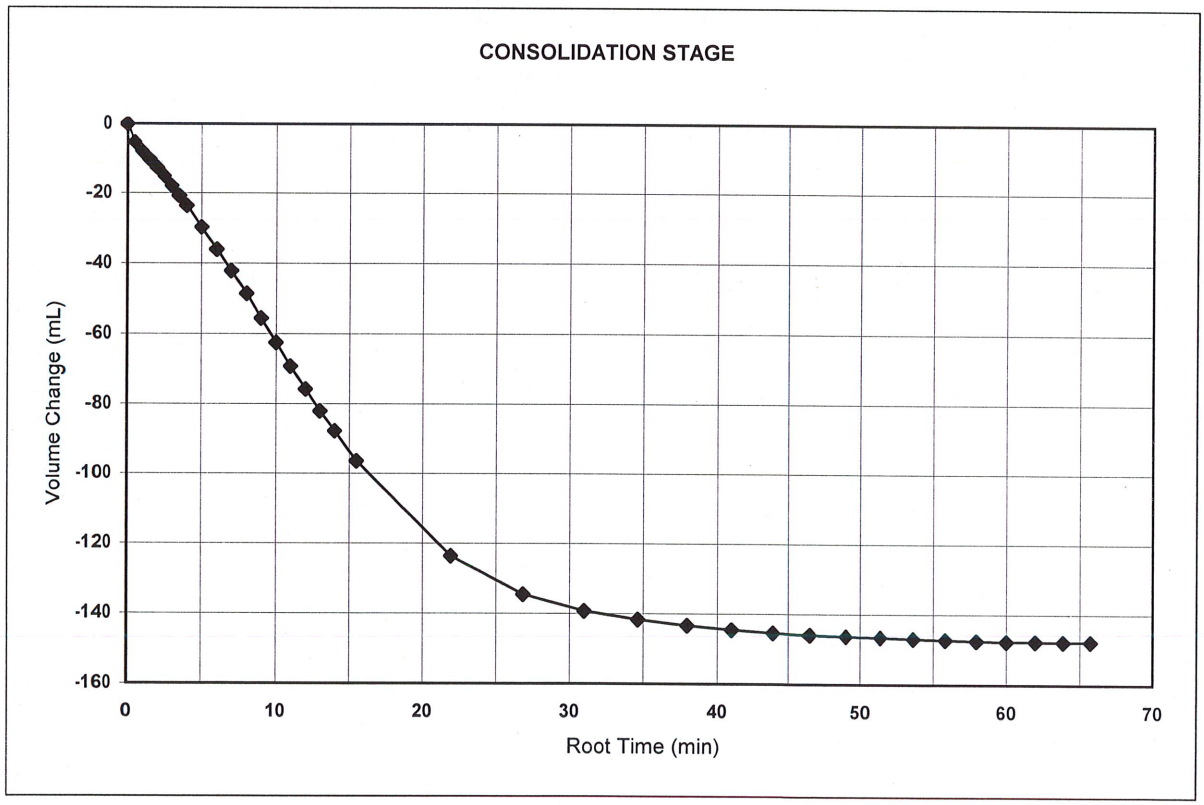
TEST SPECIMEN PREPARATION	Undisturbed	
Specific Depth (m)	: 17.42	
Orientation within original sample	: Vertical	
Description	: Please refer to sample description sheet.	
TEST SPECIMEN DETAILS	*Stage*	1
Length	*mm*	202.9
Diameter	*mm*	102.9
Moisture Content	*%*	33.4
Bulk Density	*Mg/m^3*	1.93
SATURATION STAGE		
Drainage Conditions	: Both ends and radial boundary	
Final Cell Pressure	*kPa*	520
Final Pore Pressure	*kPa*	507.2
Final Pore Pressure Parameter B		0.99
Duration	*day(s)*	2
CONSOLIDATION STAGE		
Cell Pressure	*kPa*	520
Back Pressure	*kPa*	300
Effective Pressure	*kPa*	220
Final Pore Pressure	*kPa*	303.6
Duration	*day(s)*	3
SHEARING STAGE		
Cell Pressure	*kPa*	520
Rate of Axial Displacement	*mm/min*	0.00683
Final Moisture Content	*%*	25.5
Final Bulk Density	*Mg/m^3*	1.82
CONDITIONS AT FAILURE	*Criterion*	Maximum stress ratio
Pore Pressure	*kPa*	427
Minor Effective Principal Stress	*kPa*	93
Deviator Stress	*kPa*	153
Major Effective Principal Stress	*kPa*	246
Effective Principal Stress Ratio		2.64
Pore Pressure Parameter A		0.80
Axial Strain	*%*	13.5
Correction applied to Principal Stress	*kPa*	5.6
Duration	*Days*	4

PROJECT No : 4339 CLIENT : AECOM

PROJECT : Preliminary Onshore Ground Investigation for NZT

HOLE : LF\BH02 SAMPLE No : U53 DEPTH (m) : 17.40

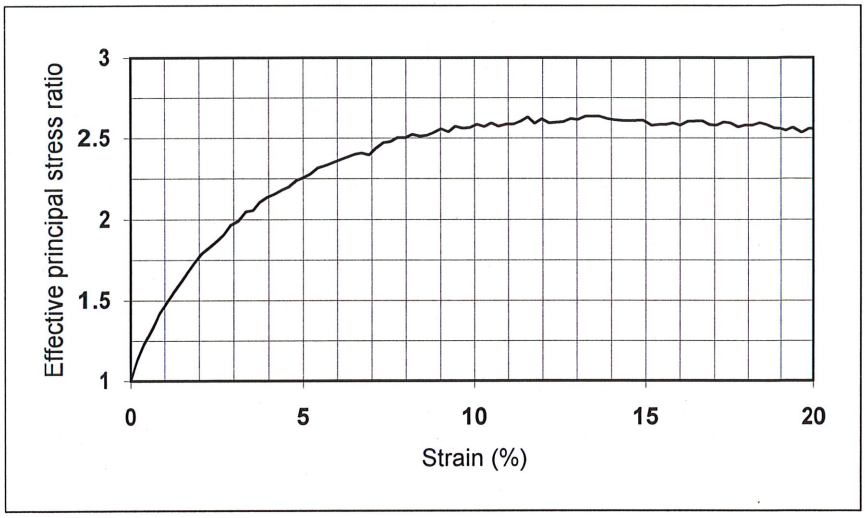




PROJECT No : 4339 **CLIENT : AECOM**

PROJECT : Preliminary Onshore Ground Investigation for NZT

HOLE : LF\BH02 **SAMPLE No : U53** **DEPTH (m) : 17.40**

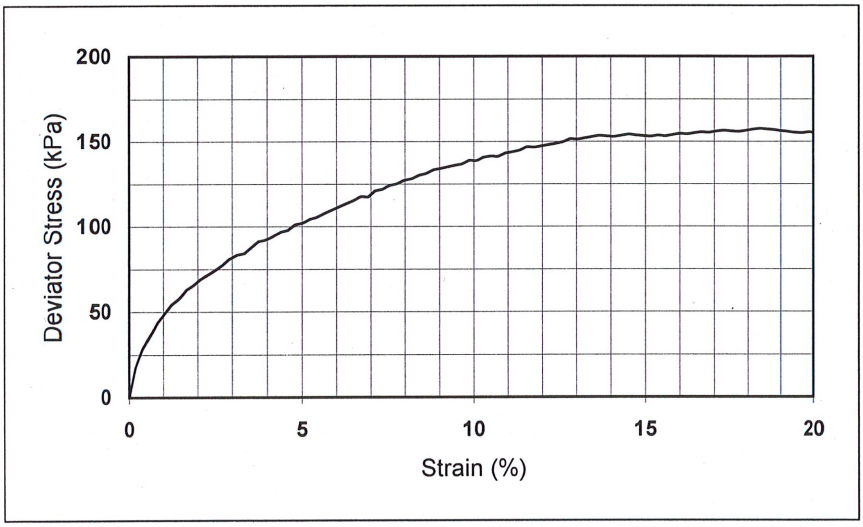


Failure Conditions

Specimen 1

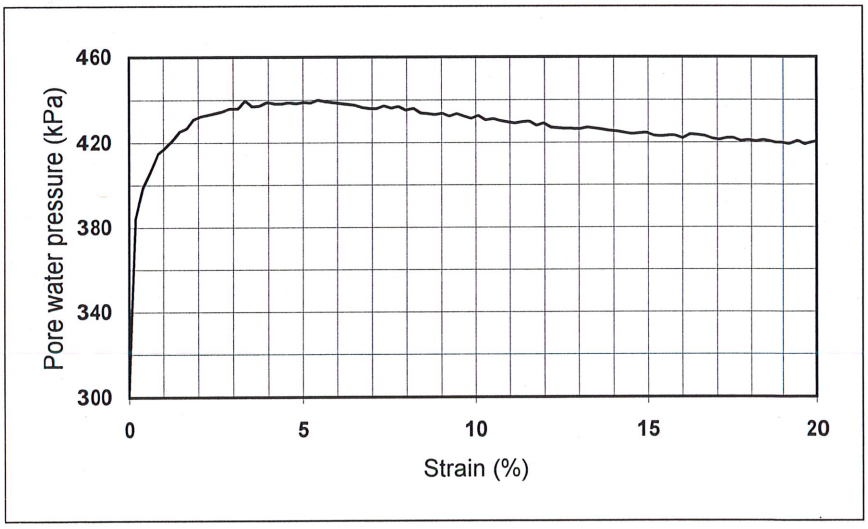
At maximum stress ratio

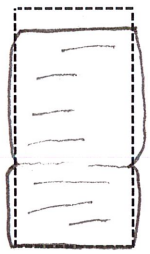
strain	13.45	%
deviator stress	152.9	*kPa*
stress ratio	2.64	



At maximum deviator stress

strain	18.34	%
deviator stress	157.8	*kPa*
stress ratio	2.60	



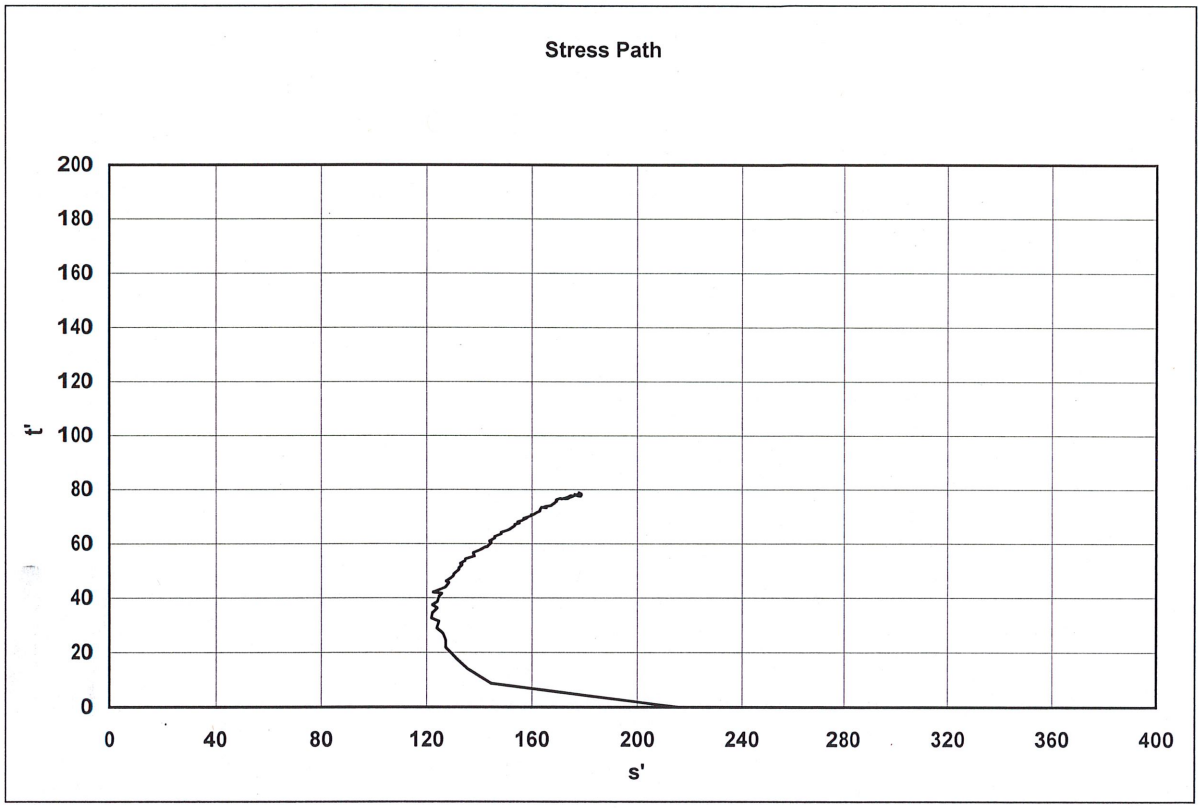


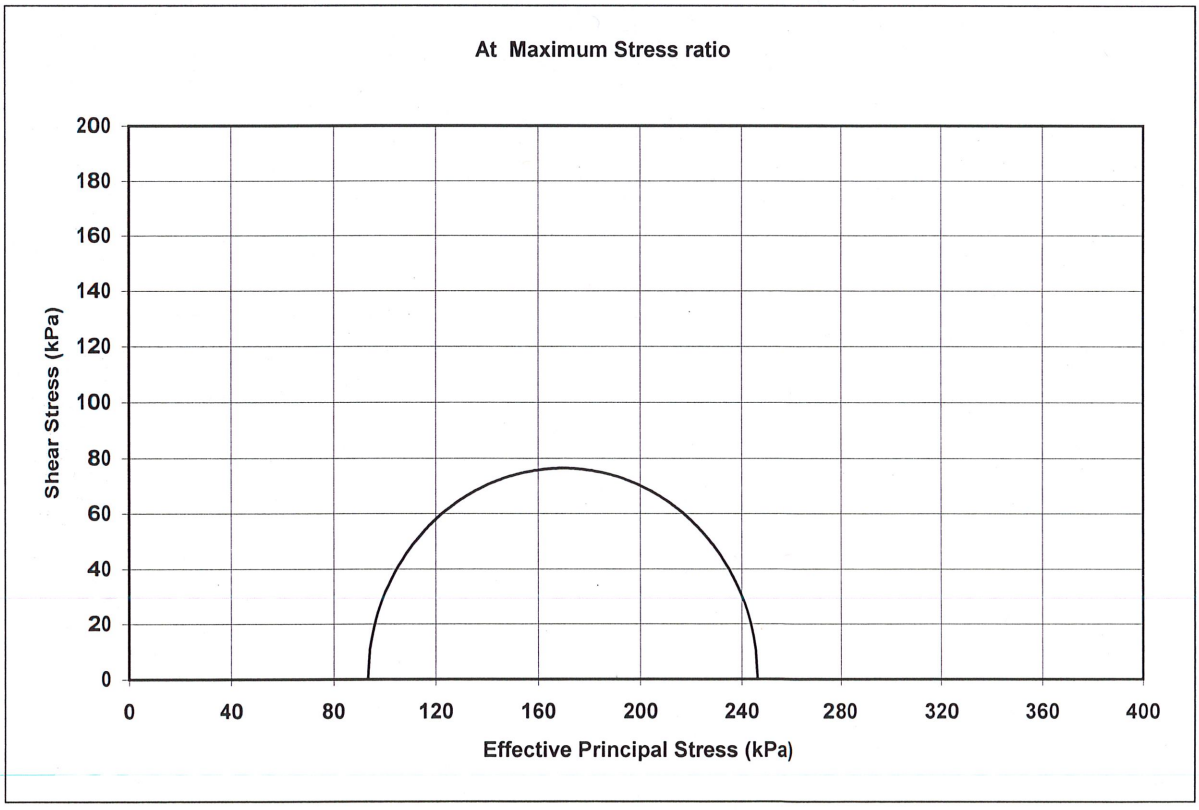
FAILURE MODE

PROJECT No : 4339 CLIENT : AECOM

PROJECT : Preliminary Onshore Ground Investigation for NZT

HOLE : LF\BH02 SAMPLE No : U53 DEPTH (m) : 17.40





ALLIED EXPLORATION AND GEOTECHNICS LIMITED

Unit 25 Stella Gill Industrial Estate,
Pelton Fell, Chester le Street, DH2 2RG.

CONSOLIDATED UNDRAINED TRIAXIAL WITH MEASUREMENT OF PORE WATER PRESSURE

B.S. 1377 : Part 8 : 1990 : Clauses 3,4,5,6 and 7

PROJECT No : 4339 **CLIENT : AECOM**

PROJECT : Preliminary Onshore Ground Investigation for NZT

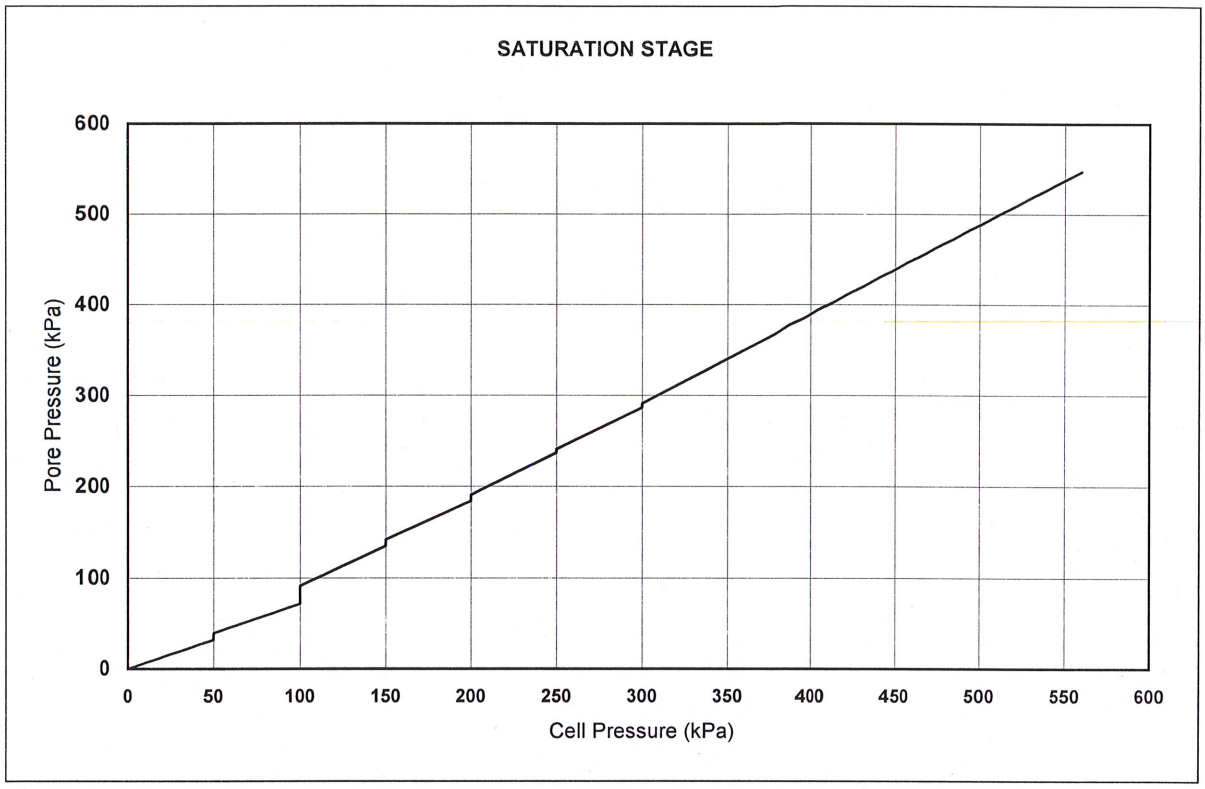
HOLE : MS\BH02 **SAMPLE No : U72** **DEPTH (m) : 21.25**

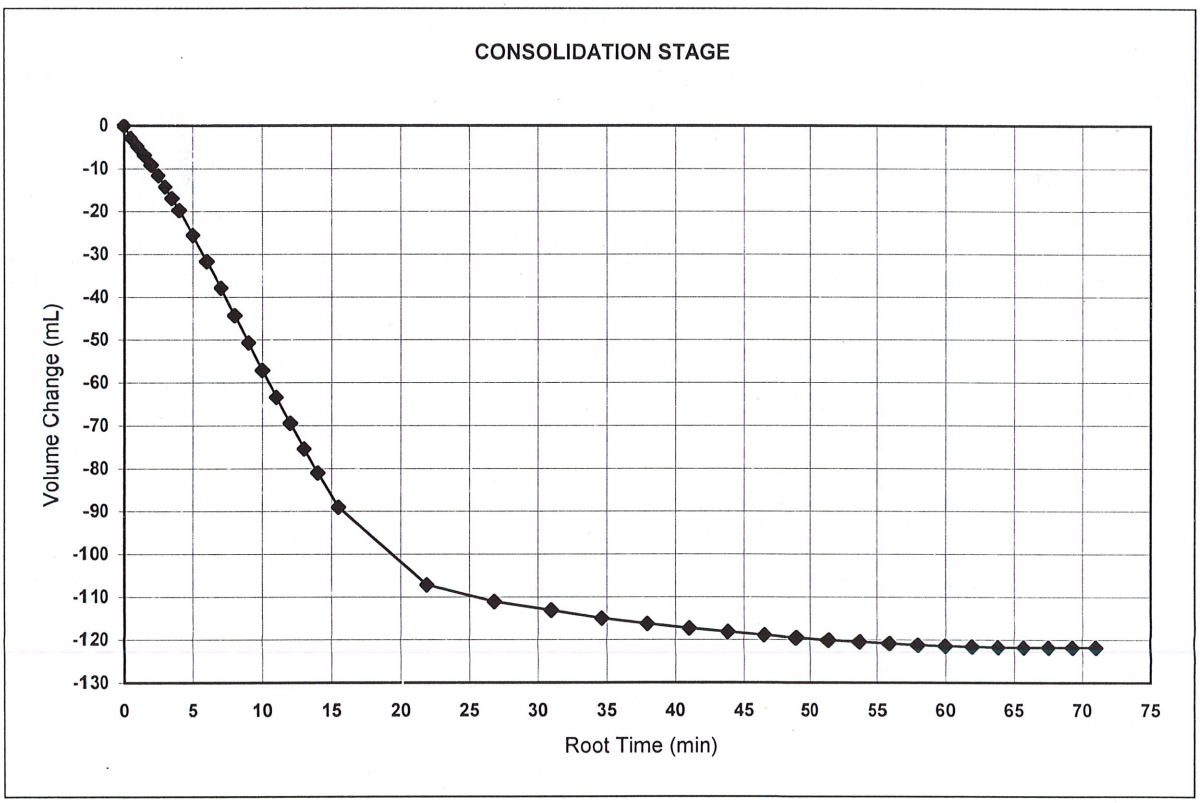
TEST SPECIMEN PREPARATION	Undisturbed	
Specific Depth (m)	: 21.27	
Orientation within original sample	: Vertical	
Description	: Please refer to sample description sheet.	
TEST SPECIMEN DETAILS	*Stage*	1
Length	*mm*	192.9
Diameter	*mm*	102.3
Moisture Content	*%*	31.2
Bulk Density	*Mg/m^3*	1.95
SATURATION STAGE		
Drainage Conditions	: Both ends and radial boundary	
Final Cell Pressure	*kPa*	560
Final Pore Pressure	*kPa*	547.4
Final Pore Pressure Parameter B		0.99
Duration	*day(s)*	2
CONSOLIDATION STAGE		
Cell Pressure	*kPa*	560
Back Pressure	*kPa*	300
Effective Pressure	*kPa*	260
Final Pore Pressure	*kPa*	302.6
Duration	*day(s)*	3
SHEARING STAGE		
Cell Pressure	*kPa*	560
Rate of Axial Displacement	*mm/min*	0.00871
Final Moisture Content	*%*	26.8
Final Bulk Density	*Mg/m^3*	1.88
CONDITIONS AT FAILURE	*Criterion*	Maximum stress ratio
Pore Pressure	*kPa*	478
Minor Effective Principal Stress	*kPa*	82
Deviator Stress	*kPa*	143
Major Effective Principal Stress	*kPa*	225
Effective Principal Stress Ratio		2.73
Pore Pressure Parameter A		1.23
Axial Strain	*%*	10.7
Correction applied to Principal Stress	*kPa*	5.3
Duration	*Days*	3

PROJECT No : 4339 **CLIENT : AECOM**

PROJECT : Preliminary Onshore Ground Investigation for NZT

HOLE : MS\BH02 **SAMPLE No : U72** **DEPTH (m) : 21.25**

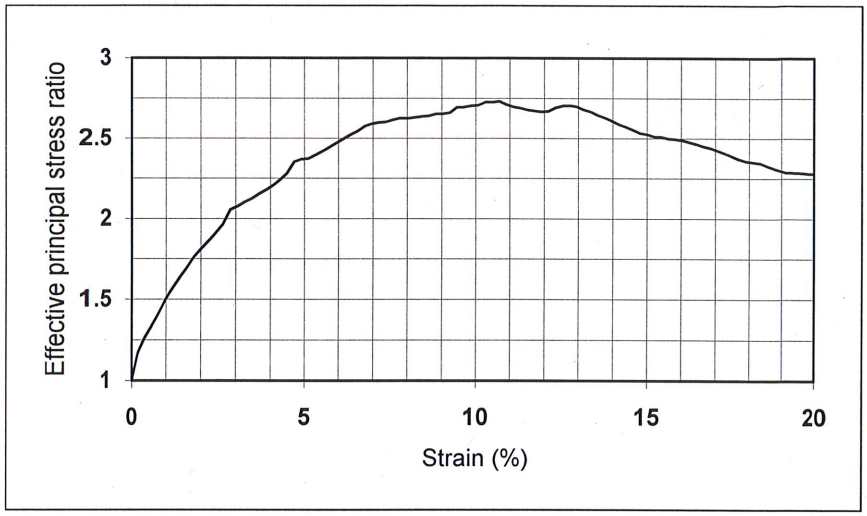




PROJECT No : 4339 **CLIENT : AECOM**

PROJECT : Preliminary Onshore Ground Investigation for NZT

HOLE : MS\BH02 **SAMPLE No : U72** **DEPTH (m) : 21.25**

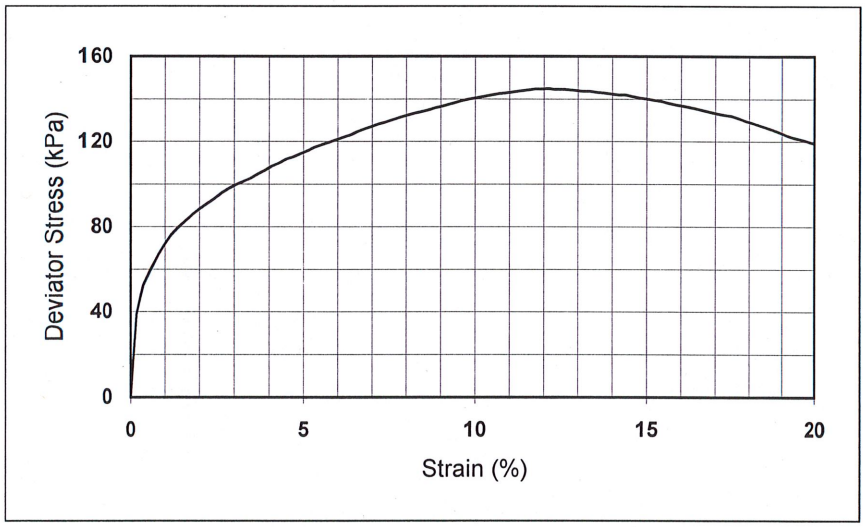


Failure Conditions

Specimen 1

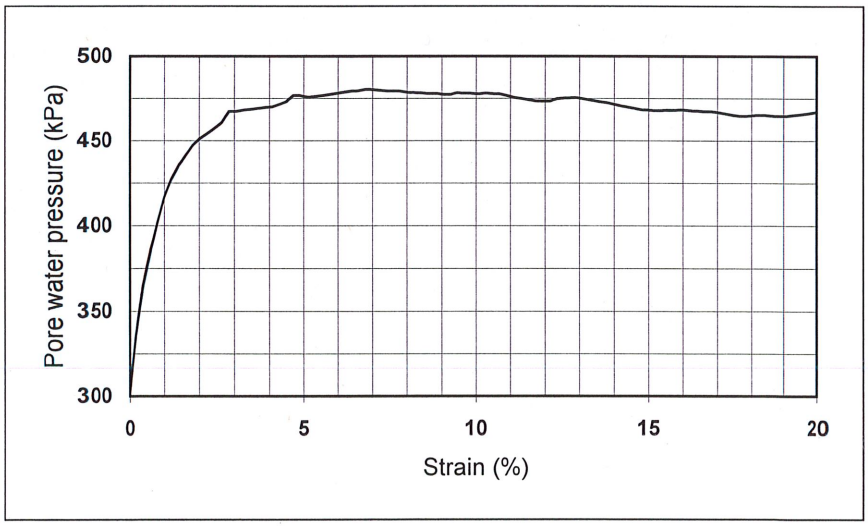
At maximum stress ratio

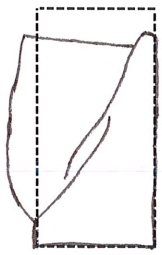
strain	10.69	%
deviator stress	142.5	*kPa*
stress ratio	2.73	



At maximum deviator stress

strain	12.13	%
deviator stress	144.8	*kPa*
stress ratio	2.67	



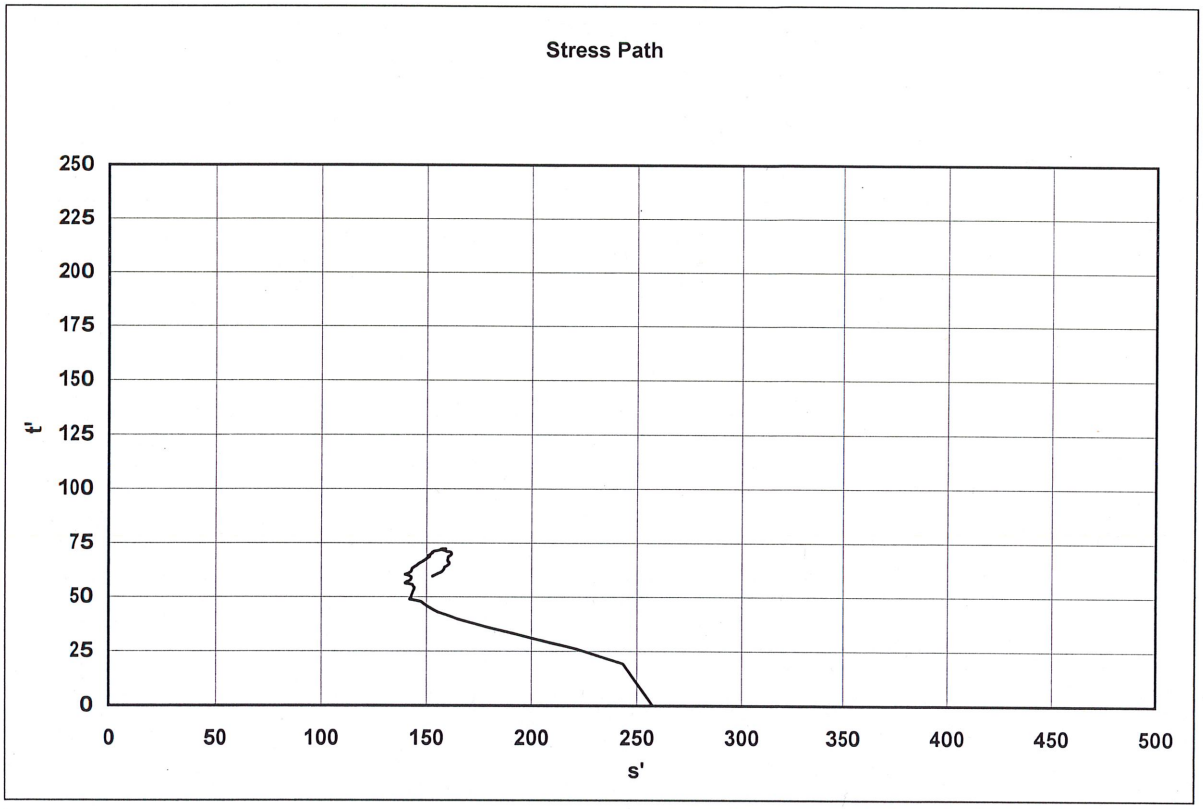


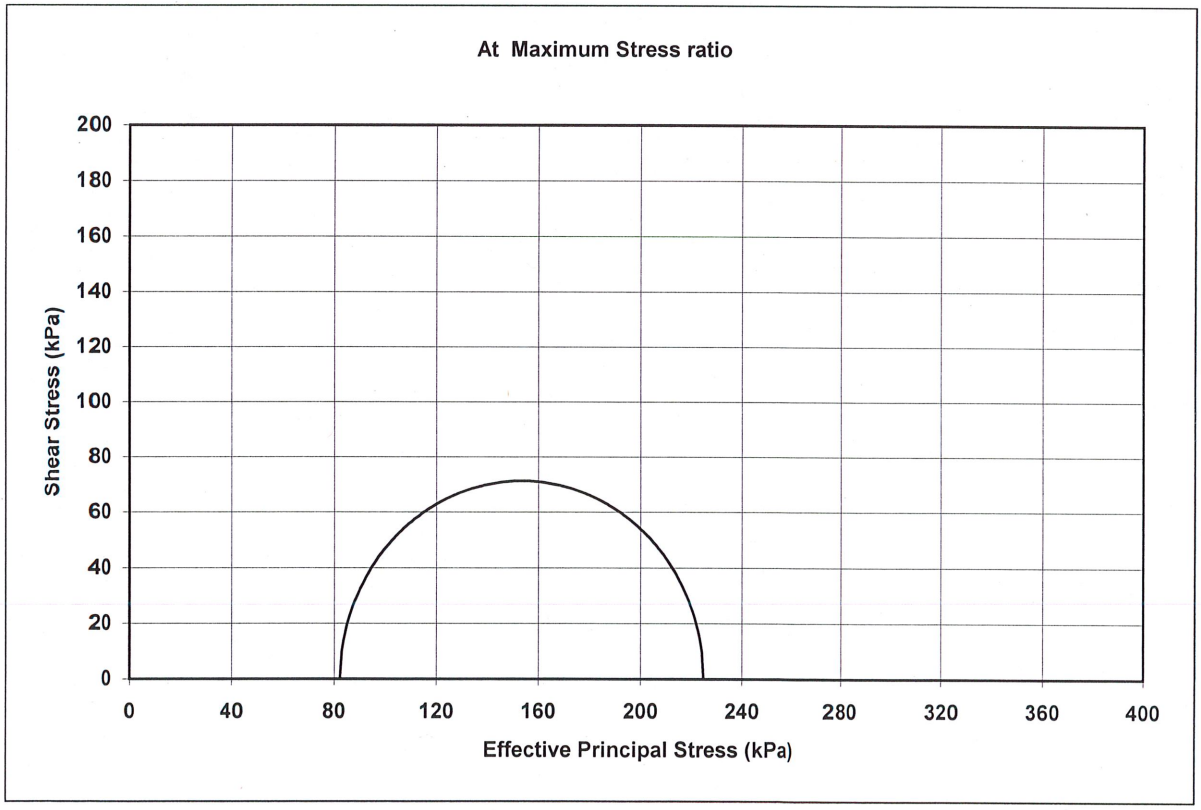
FAILURE MODE

PROJECT No : 4339 CLIENT : AECOM

PROJECT : Preliminary Onshore Ground Investigation for NZT

HOLE : MS\BH02 SAMPLE No : U72 DEPTH (m) : 21.25





ALLIED EXPLORATION AND GEOTECHNICS LIMITED

Unit 25 Stella Gill Industrial Estate,
Pelton Fell, Chester le Street, DH2 2RG.

CONSOLIDATED UNDRAINED TRIAXIAL WITH MEASUREMENT OF PORE WATER PRESSURE

B.S. 1377 : Part 8 : 1990 : Clauses 3,4,5,6 and 7

PROJECT No : 4339 **CLIENT : AECOM**

PROJECT : Preliminary Onshore Ground Investigation for NZT

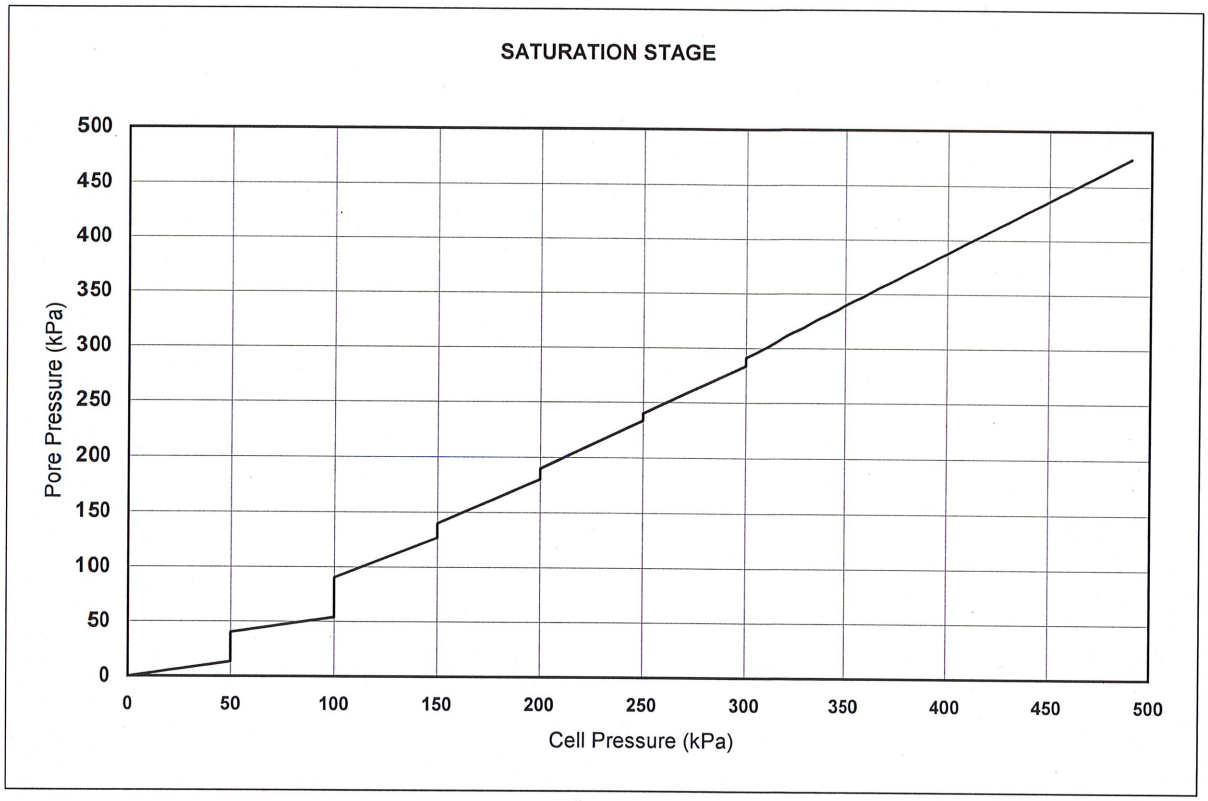
HOLE : MS\BH03 **SAMPLE No : U60** **DEPTH (m) : 16.10**

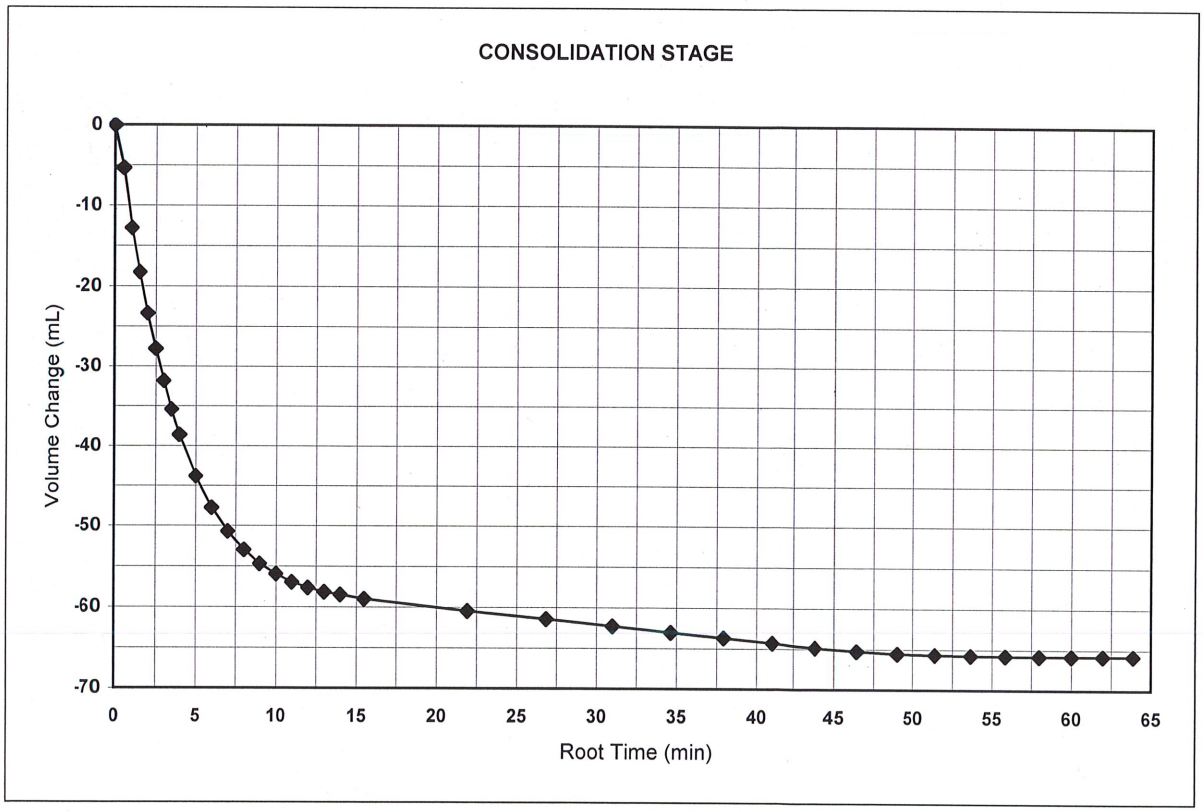
TEST SPECIMEN PREPARATION	Undisturbed	
Specific Depth (m)	: 16.13	
Orientation within original sample	: Vertical	
Description	: Please refer to sample description sheet.	
TEST SPECIMEN DETAILS	*Stage*	1
Length	*mm*	205.9
Diameter	*mm*	99.8
Moisture Content	*%*	19.2
Bulk Density	*Mg/m^3*	2.11
SATURATION STAGE		
Drainage Conditions	: Both ends and radial boundary	
Final Cell Pressure	*kPa*	490
Final Pore Pressure	*kPa*	475.1
Final Pore Pressure Parameter B		0.97
Duration	*day(s)*	2
CONSOLIDATION STAGE		
Cell Pressure	*kPa*	490
Back Pressure	*kPa*	300
Effective Pressure	*kPa*	190
Final Pore Pressure	*kPa*	300.1
Duration	*day(s)*	3
SHEARING STAGE		
Cell Pressure	*kPa*	490
Rate of Axial Displacement	*mm/min*	0.0141
Final Moisture Content	*%*	20.8
Final Bulk Density	*Mg/m^3*	2.14
CONDITIONS AT FAILURE	*Criterion*	Maximum stress ratio
Pore Pressure	*kPa*	358
Minor Effective Principal Stress	*kPa*	132
Deviator Stress	*kPa*	252
Major Effective Principal Stress	*kPa*	384
Effective Principal Stress Ratio		2.91
Pore Pressure Parameter A		0.23
Axial Strain	*%*	3.0
Correction applied to Principal Stress	*kPa*	2.7
Duration	*Days*	2

PROJECT No : 4339 CLIENT : AECOM

PROJECT : Preliminary Onshore Ground Investigation for NZT

HOLE : MS\BH03 SAMPLE No : U60 DEPTH (m) : 16.10

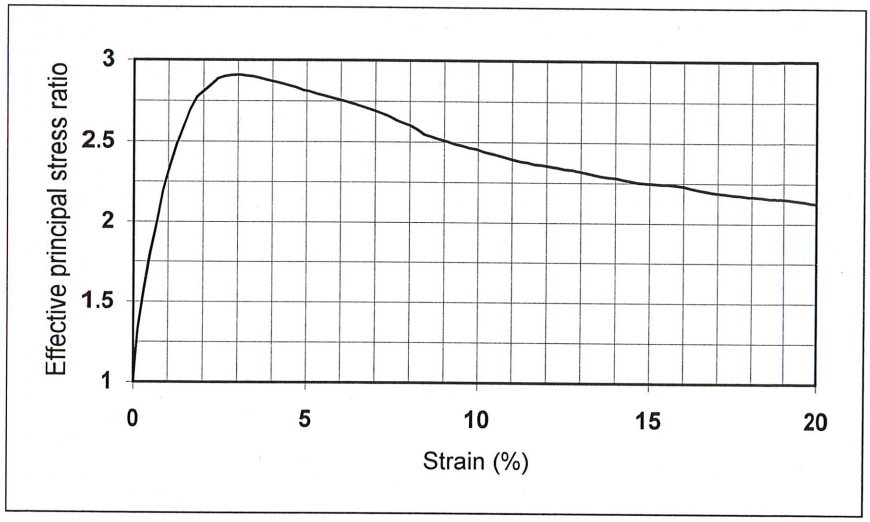




PROJECT No : 4339 **CLIENT : AECOM**

PROJECT : Preliminary Onshore Ground Investigation for NZT

HOLE : MS\BH03 **SAMPLE No : U60** **DEPTH (m) : 16.10**

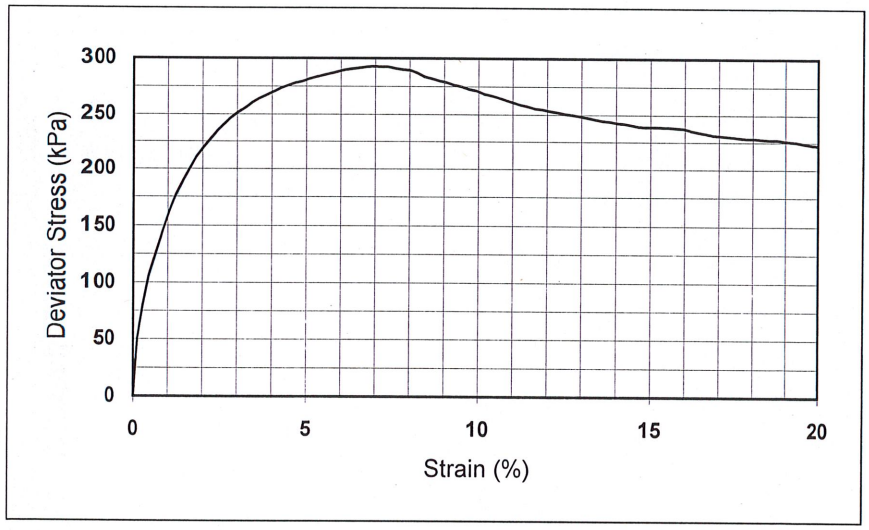


Failure Conditions

Specimen 1

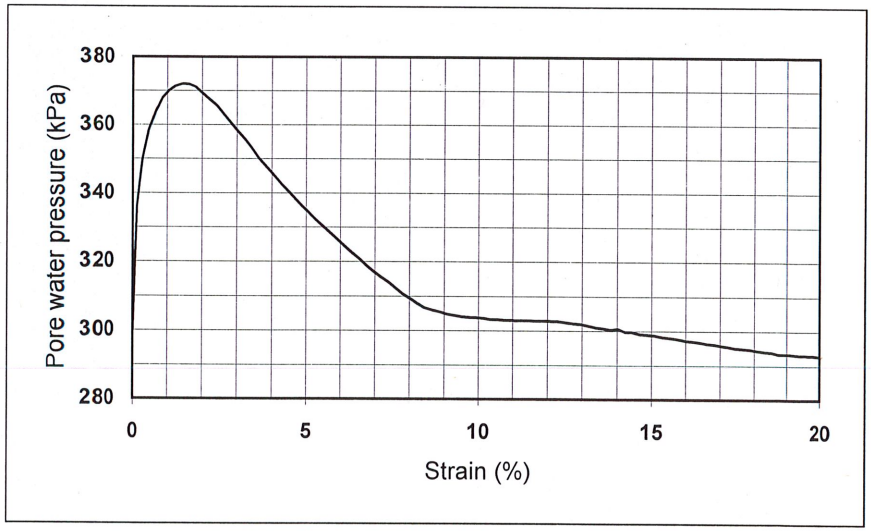
At maximum stress ratio

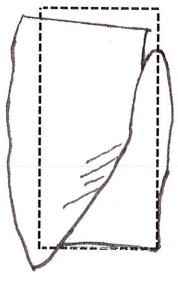
strain	3.02	%
deviator stress	251.9	*kPa*
stress ratio	2.91	



At maximum deviator stress

strain	6.97	%
deviator stress	293.0	*kPa*
stress ratio	2.70	



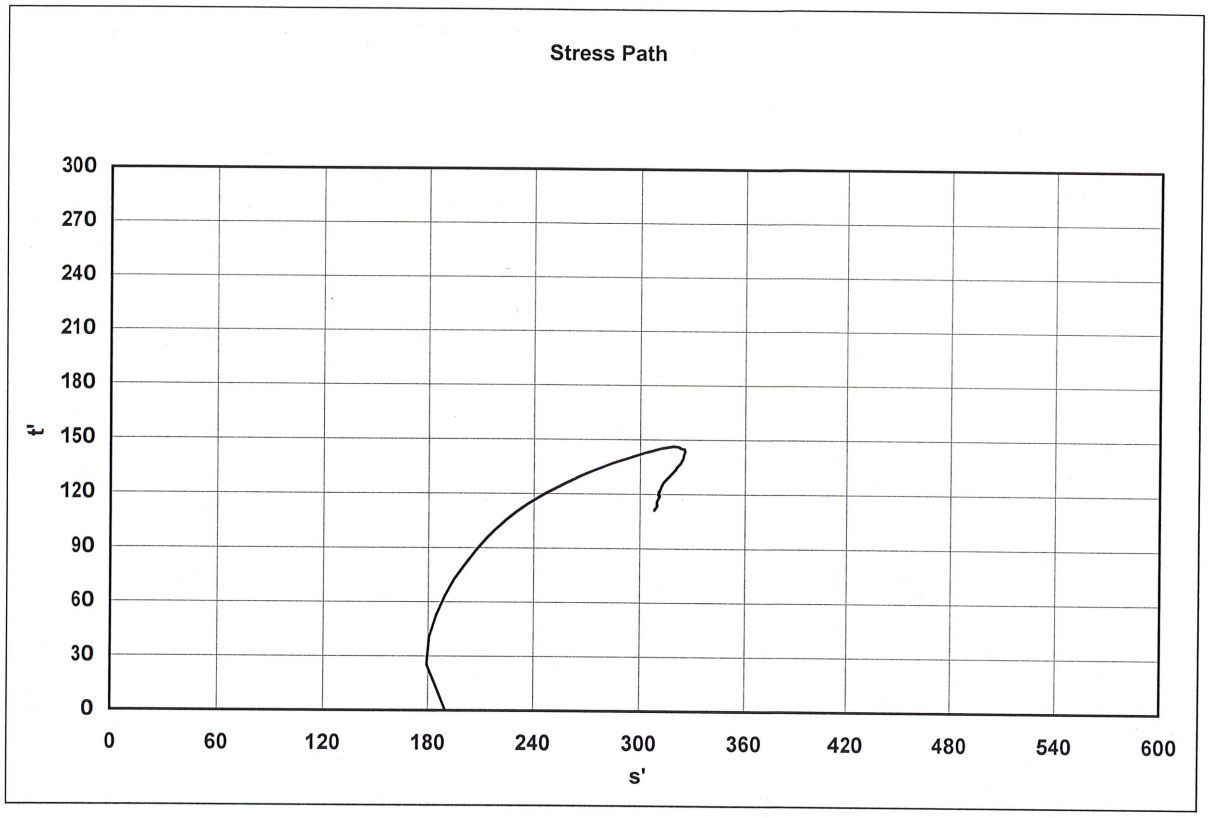


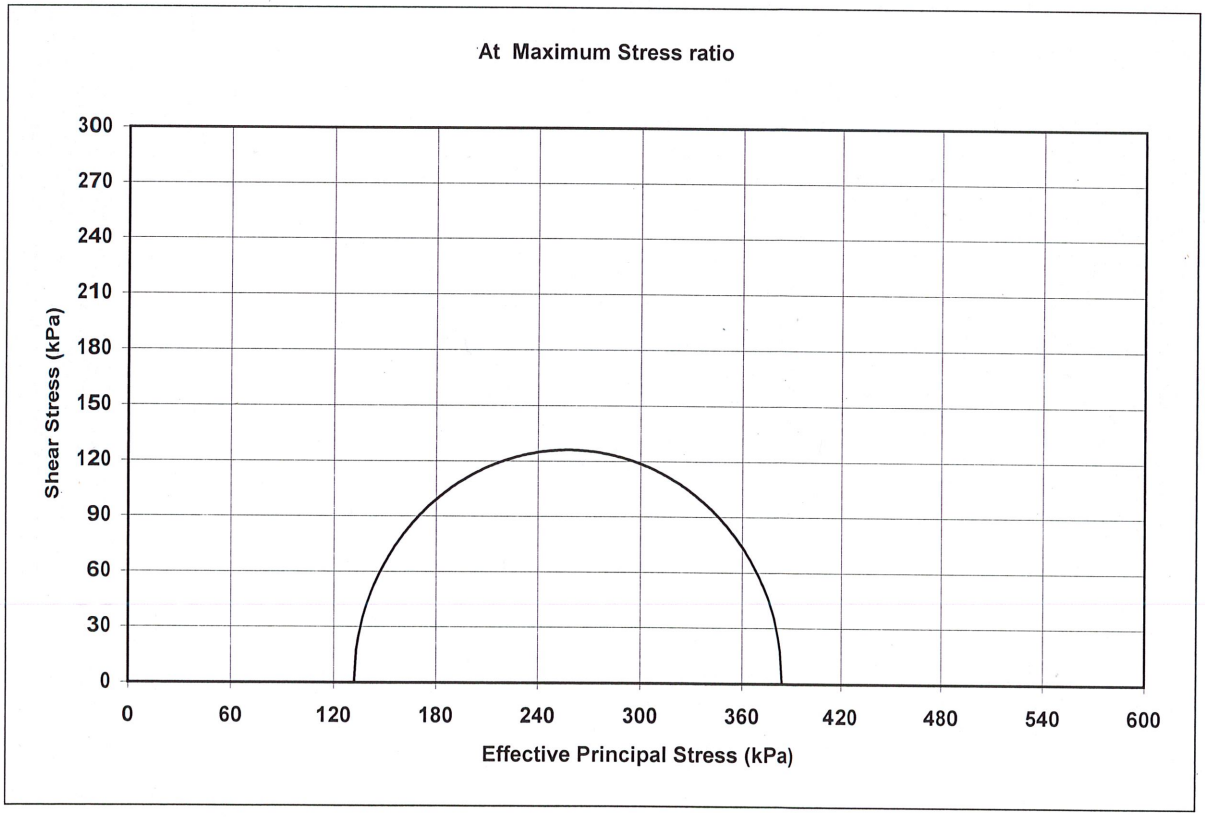
FAILURE MODE

PROJECT No : 4339 CLIENT : AECOM

PROJECT : Preliminary Onshore Ground Investigation for NZT

HOLE : MS\BH03 SAMPLE No : U60 DEPTH (m) : 16.10





ALLIED EXPLORATION AND GEOTECHNICS LIMITED

Unit 25 Stella Gill Industrial Estate,
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CONSOLIDATED UNDRAINED TRIAXIAL WITH MEASUREMENT OF PORE WATER PRESSURE

B.S. 1377 : Part 8 : 1990 : Clauses 3,4,5,6 and 7

PROJECT No : 4339 **CLIENT : AECOM**

PROJECT : Preliminary Onshore Ground Investigation for NZT

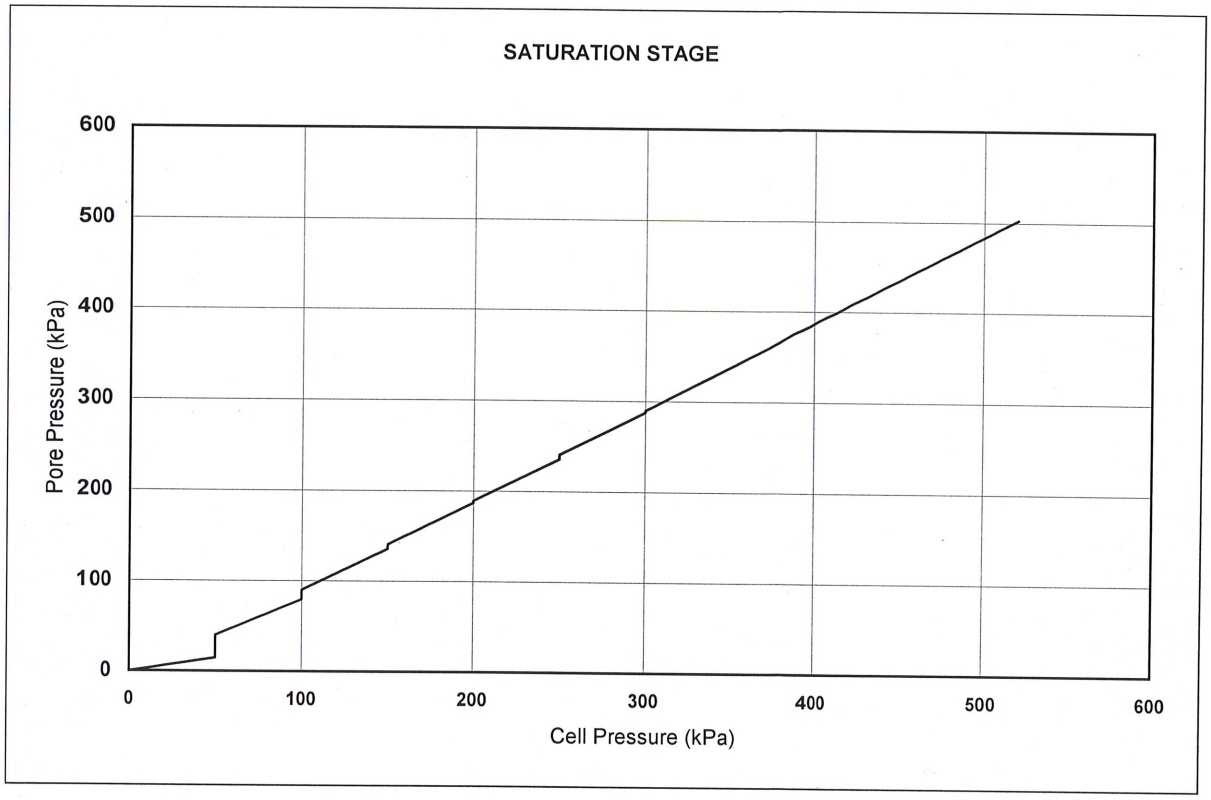
HOLE : MS\BH03 **SAMPLE No : U70** **DEPTH (m) : 19.10**

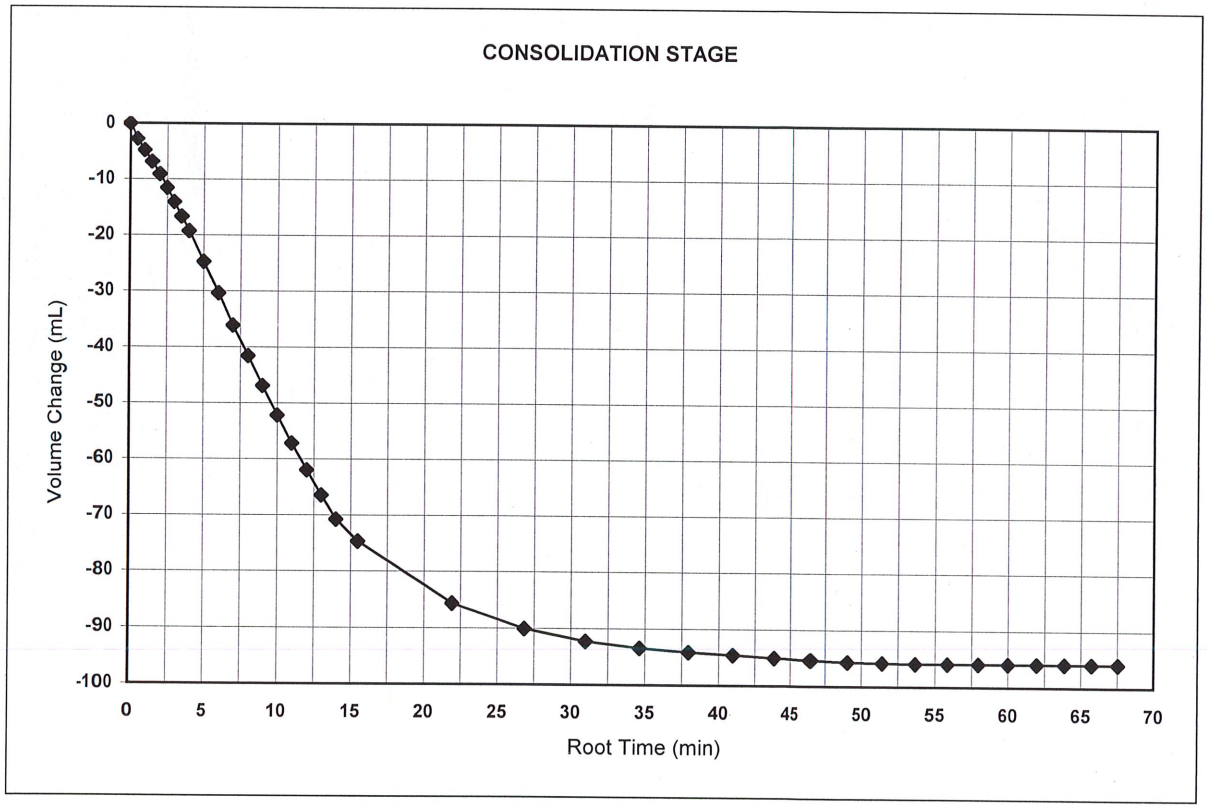
TEST SPECIMEN PREPARATION	Undisturbed	
Specific Depth (m)	: 19.12	
Orientation within original sample	: Vertical	
Description	: Please refer to sample description sheet.	
TEST SPECIMEN DETAILS	*Stage*	1
Length	*mm*	200.8
Diameter	*mm*	103.1
Moisture Content	*%*	27.1
Bulk Density	*Mg/m^3*	1.99
SATURATION STAGE		
Drainage Conditions	: Both ends and radial boundary	
Final Cell Pressure	*kPa*	520
Final Pore Pressure	*kPa*	502.9
Final Pore Pressure Parameter B		0.97
Duration	*day(s)*	2
CONSOLIDATION STAGE		
Cell Pressure	*kPa*	520
Back Pressure	*kPa*	300
Effective Pressure	*kPa*	220
Final Pore Pressure	*kPa*	305.7
Duration	*day(s)*	3
SHEARING STAGE		
Cell Pressure	*kPa*	520
Rate of Axial Displacement	*mm/min*	0.0091
Final Moisture Content	*%*	24.6
Final Bulk Density	*Mg/m^3*	1.96
CONDITIONS AT FAILURE	*Criterion*	Maximum stress ratio
Pore Pressure	*kPa*	400
Minor Effective Principal Stress	*kPa*	120
Deviator Stress	*kPa*	141
Major Effective Principal Stress	*kPa*	261
Effective Principal Stress Ratio		2.17
Pore Pressure Parameter A		0.67
Axial Strain	*%*	9.4
Correction applied to Principal Stress	*kPa*	5.1
Duration	*Days*	3

PROJECT No : 4339 CLIENT : AECOM

PROJECT : Preliminary Onshore Ground Investigation for NZT

HOLE : MS\BH03 SAMPLE No : U70 DEPTH (m) : 19.10

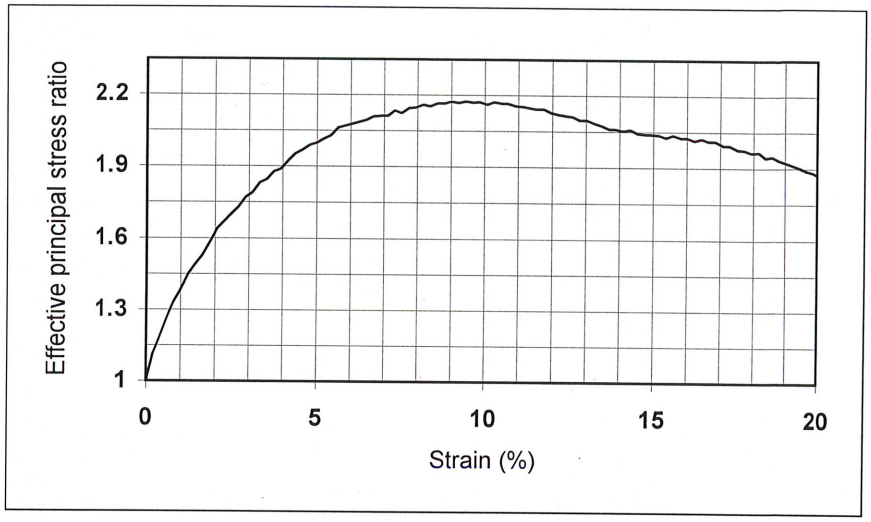




PROJECT No : 4339 **CLIENT : AECOM**

PROJECT : Preliminary Onshore Ground Investigation for NZT

HOLE : MS\BH03 **SAMPLE No : U70** **DEPTH (m) : 19.10**

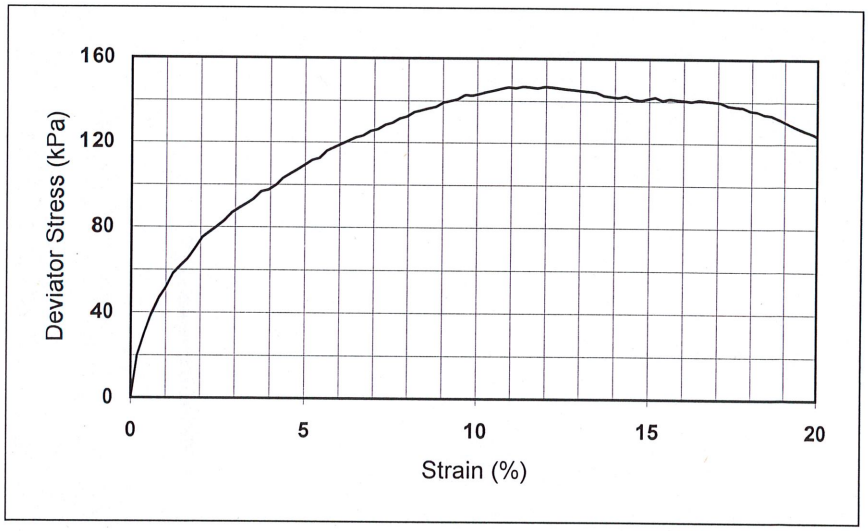


Failure Conditions

Specimen 1

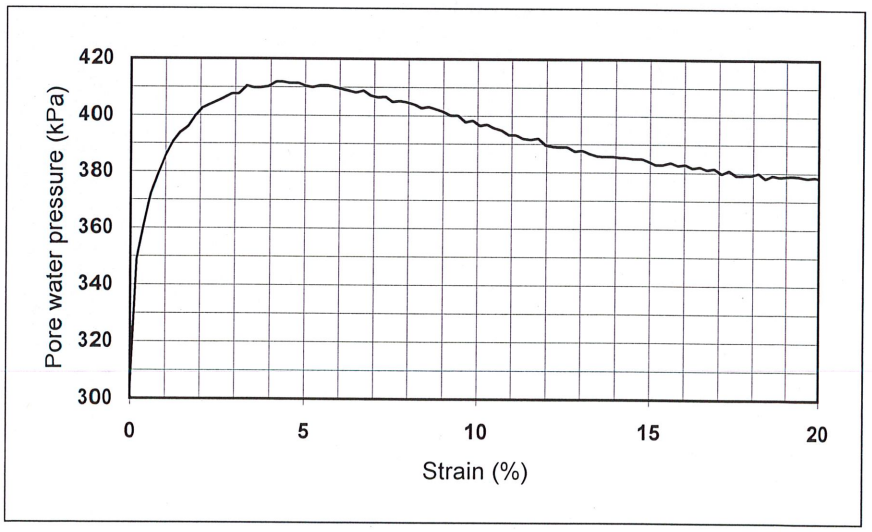
At maximum stress ratio

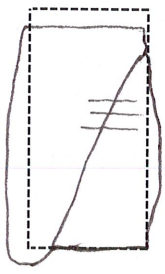
strain	9.43	%
deviator stress	140.8	*kPa*
stress ratio	2.17	



At maximum deviator stress

strain	11.33	%
deviator stress	146.9	*kPa*
stress ratio	2.15	



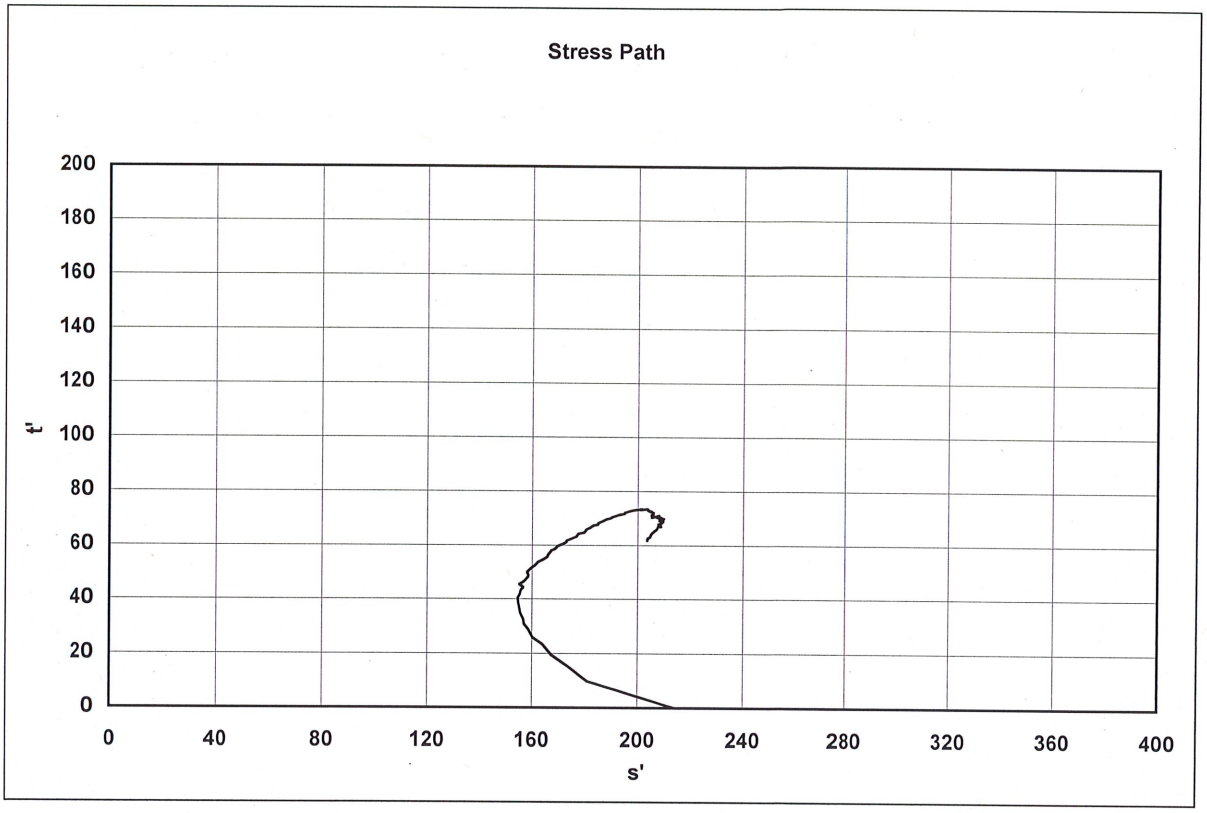


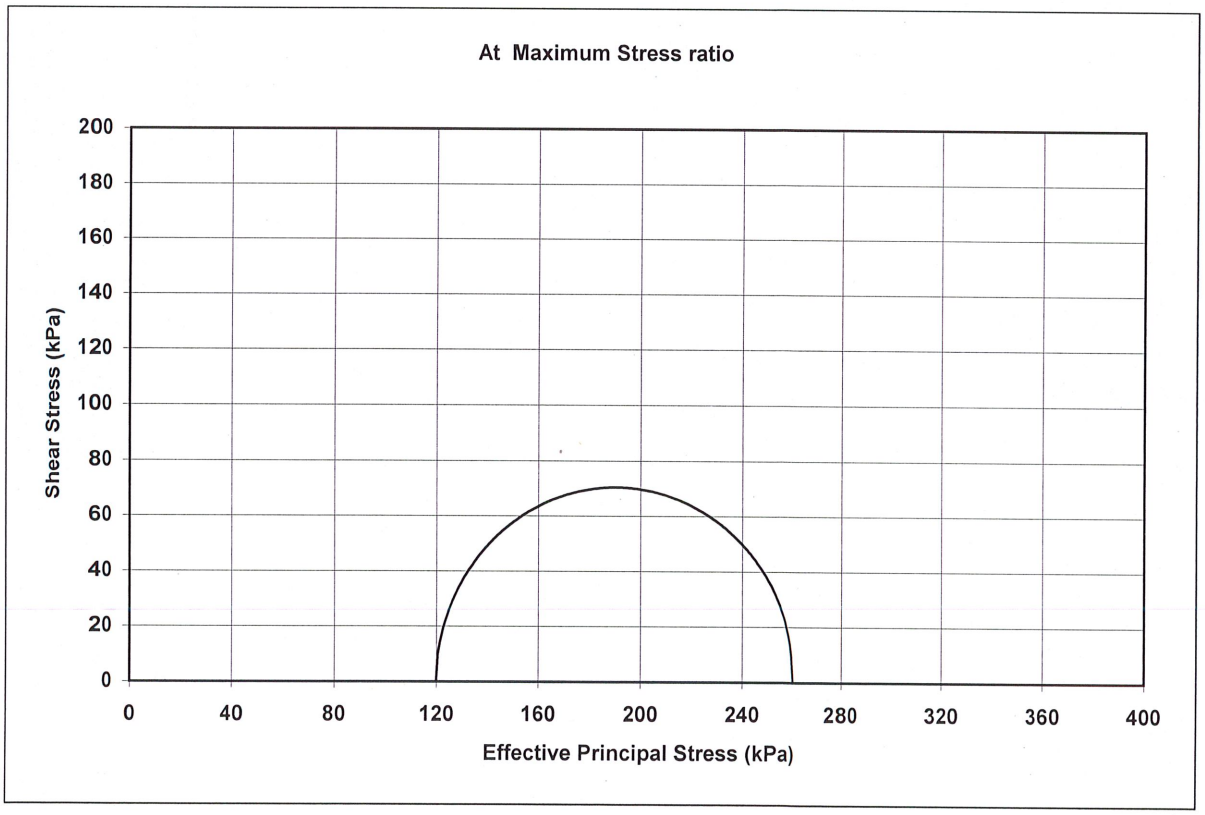
FAILURE MODE

PROJECT No : 4339 CLIENT : AECOM

PROJECT : Preliminary Onshore Ground Investigation for NZT

HOLE : MS\BH03 SAMPLE No : U70 DEPTH (m) : 19.10





ALLIED EXPLORATION AND GEOTECHNICS LIMITED

Unit 25 Stella Gill Industrial Estate,
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CONSOLIDATED UNDRAINED TRIAXIAL WITH MEASUREMENT OF PORE WATER PRESSURE

B.S. 1377 : Part 8 : 1990 : Clauses 3,4,5,6 and 7

PROJECT No : 4339 **CLIENT : AECOM**

PROJECT : Preliminary Onshore Ground Investigation

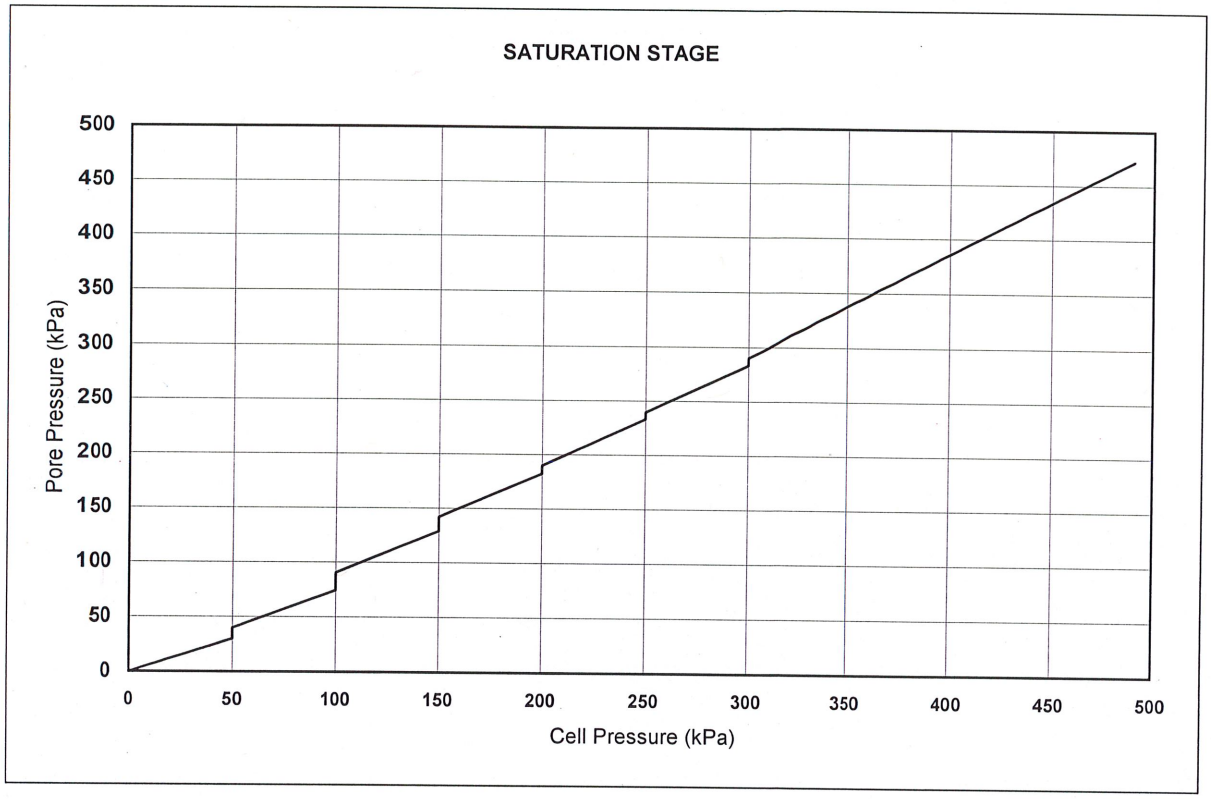
HOLE : MS\BH04 **SAMPLE No : U41** **DEPTH (m) : 14.85**

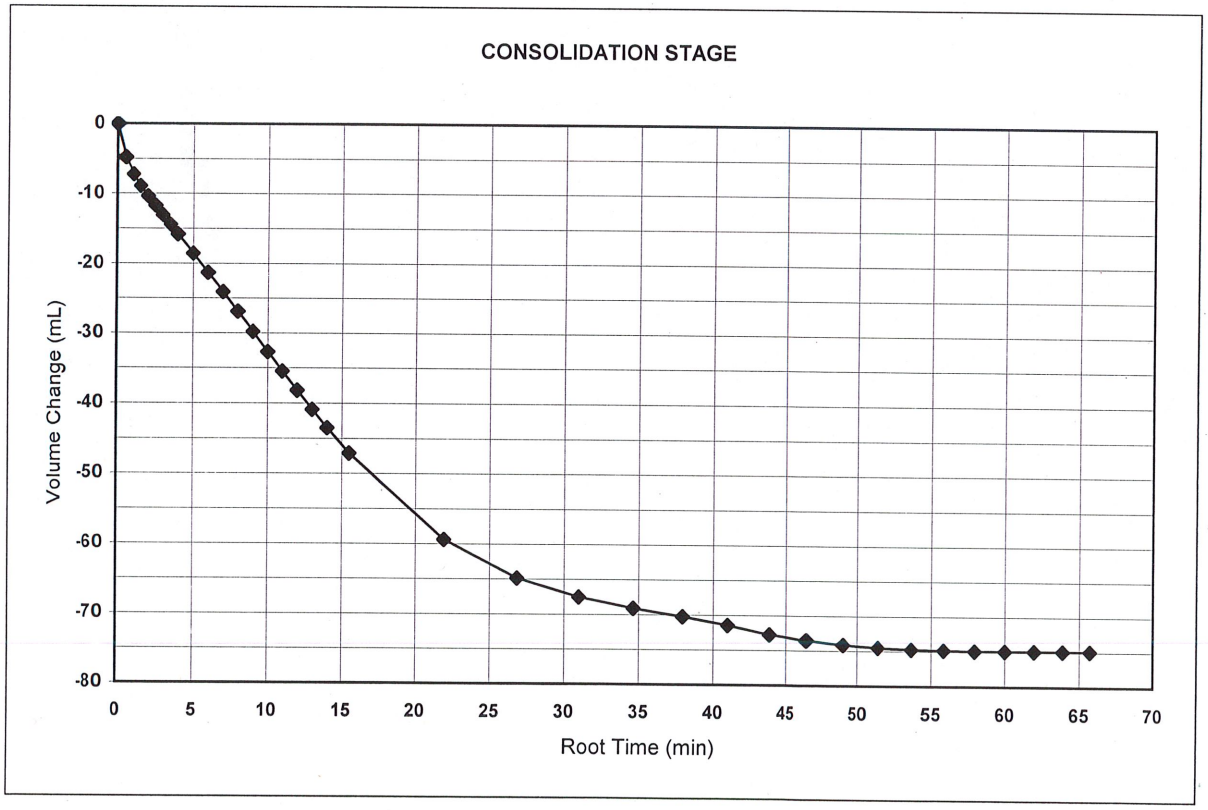
TEST SPECIMEN PREPARATION	Undisturbed	
Specific Depth (m)	: 15.04	
Orientation within original sample	: Vertical	
Description	: Please refer to sample description sheet.	
TEST SPECIMEN DETAILS	*Stage*	1
Length	*mm*	200.2
Diameter	*mm*	101.3
Moisture Content	*%*	30.0
Bulk Density	*Mg/m^3*	1.96
SATURATION STAGE		
Drainage Conditions	: Both ends and radial boundary	
Final Cell Pressure	*kPa*	490
Final Pore Pressure	*kPa*	472.1
Final Pore Pressure Parameter B		0.96
Duration	*day(s)*	2
CONSOLIDATION STAGE		
Cell Pressure	*kPa*	490
Back Pressure	*kPa*	300
Effective Pressure	*kPa*	190
Final Pore Pressure	*kPa*	302.5
Duration	*day(s)*	2
SHEARING STAGE		
Cell Pressure	*kPa*	490
Rate of Axial Displacement	*mm/min*	0.0074
Final Moisture Content	*%*	28.7
Final Bulk Density	*Mg/m^3*	1.94
CONDITIONS AT FAILURE	*Criterion*	Maximum stress ratio
Pore Pressure	*kPa*	378
Minor Effective Principal Stress	*kPa*	112
Deviator Stress	*kPa*	183
Major Effective Principal Stress	*kPa*	296
Effective Principal Stress Ratio		2.63
Pore Pressure Parameter A		0.41
Axial Strain	*%*	4.2
Correction applied to Principal Stress	*kPa*	3.7
Duration	*Days*	4

PROJECT No : 4339 CLIENT : AECOM

PROJECT : Preliminary Onshore Ground Investigation

HOLE : MS\BH04 SAMPLE No : U41 DEPTH (m) : 14.85

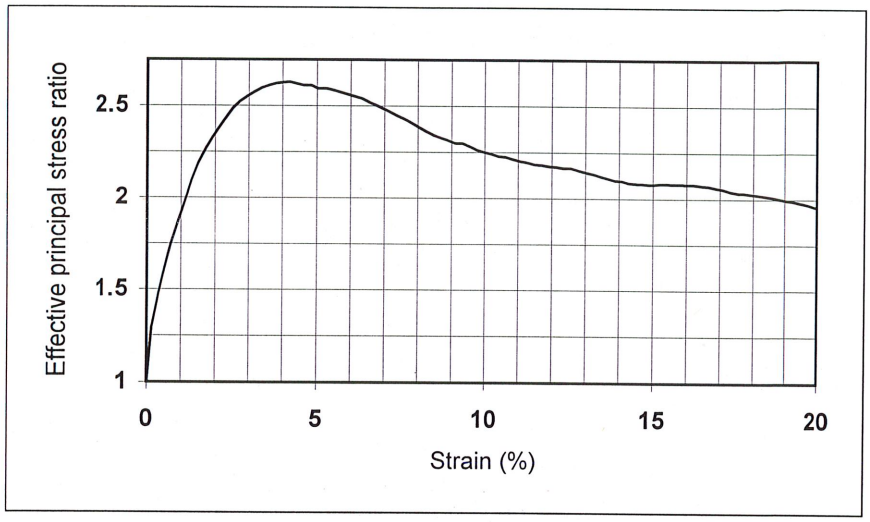




PROJECT No : 4339 **CLIENT : AECOM**

PROJECT : Preliminary Onshore Ground Investigation

HOLE : MS\BH04 **SAMPLE No : U41** **DEPTH (m) : 14.85**

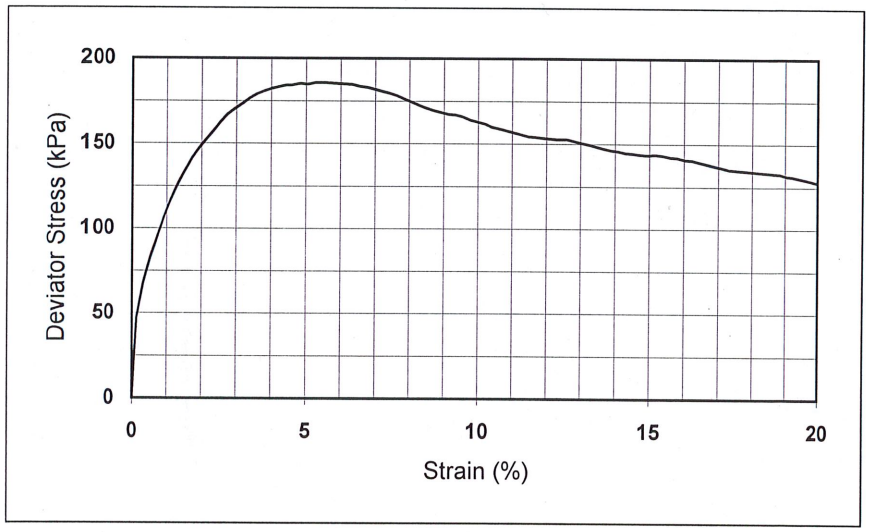


Failure Conditions

Specimen 1

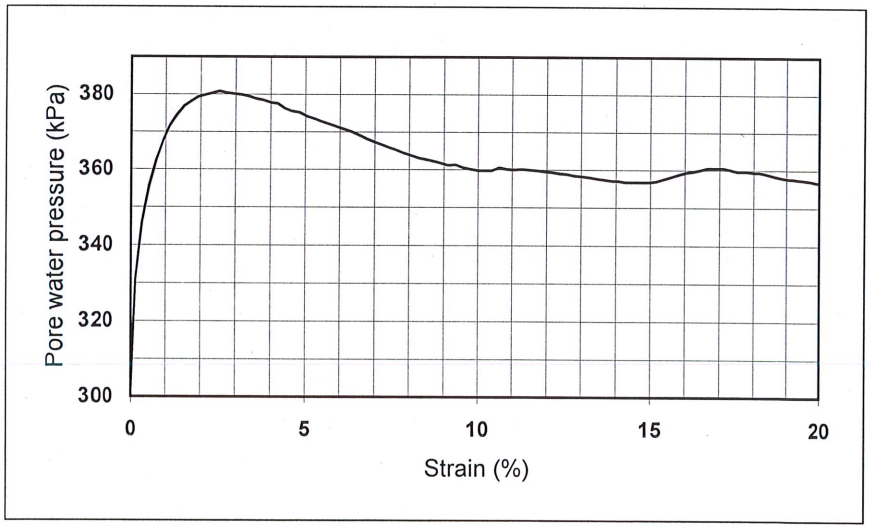
At maximum stress ratio

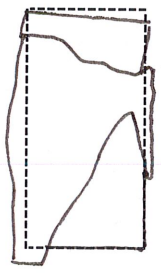
strain	4.21	%
deviator stress	183.3	*kPa*
stress ratio	2.63	



At maximum deviator stress

strain	5.69	%
deviator stress	186.2	*kPa*
stress ratio	2.58	



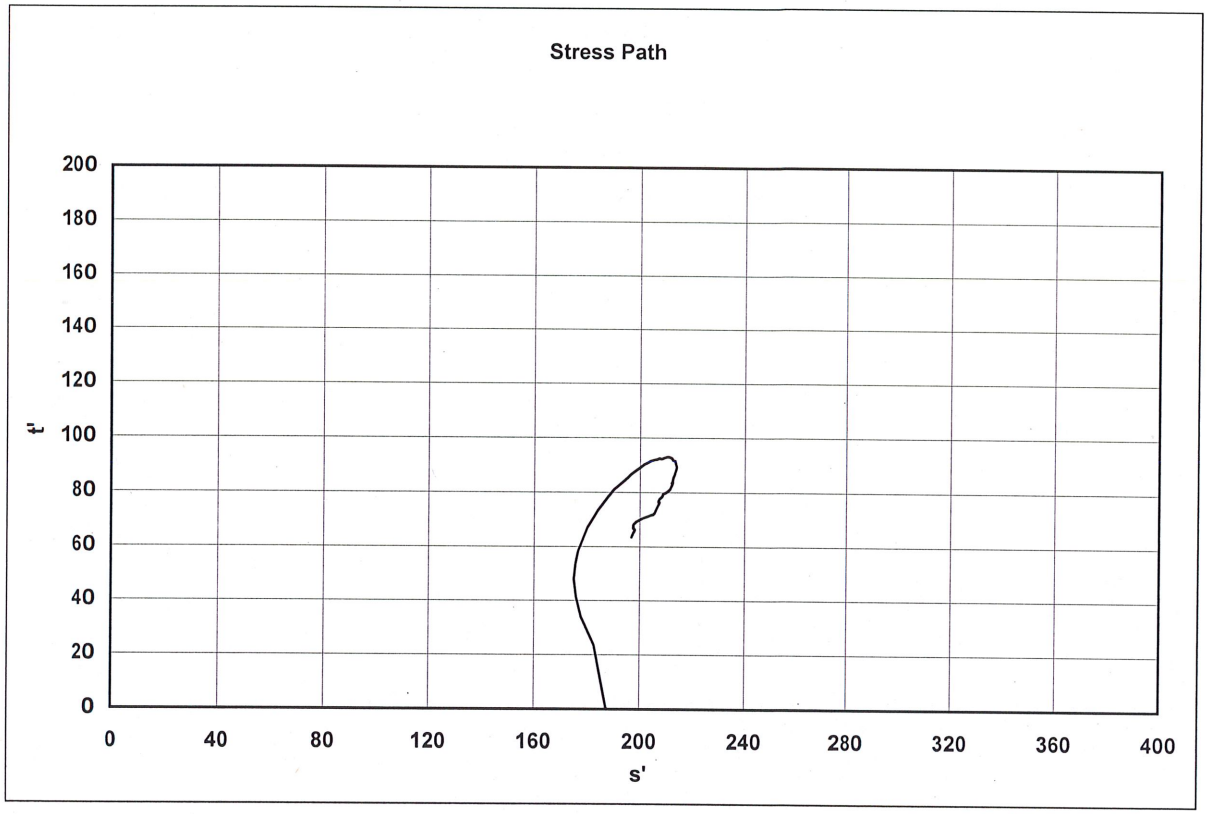


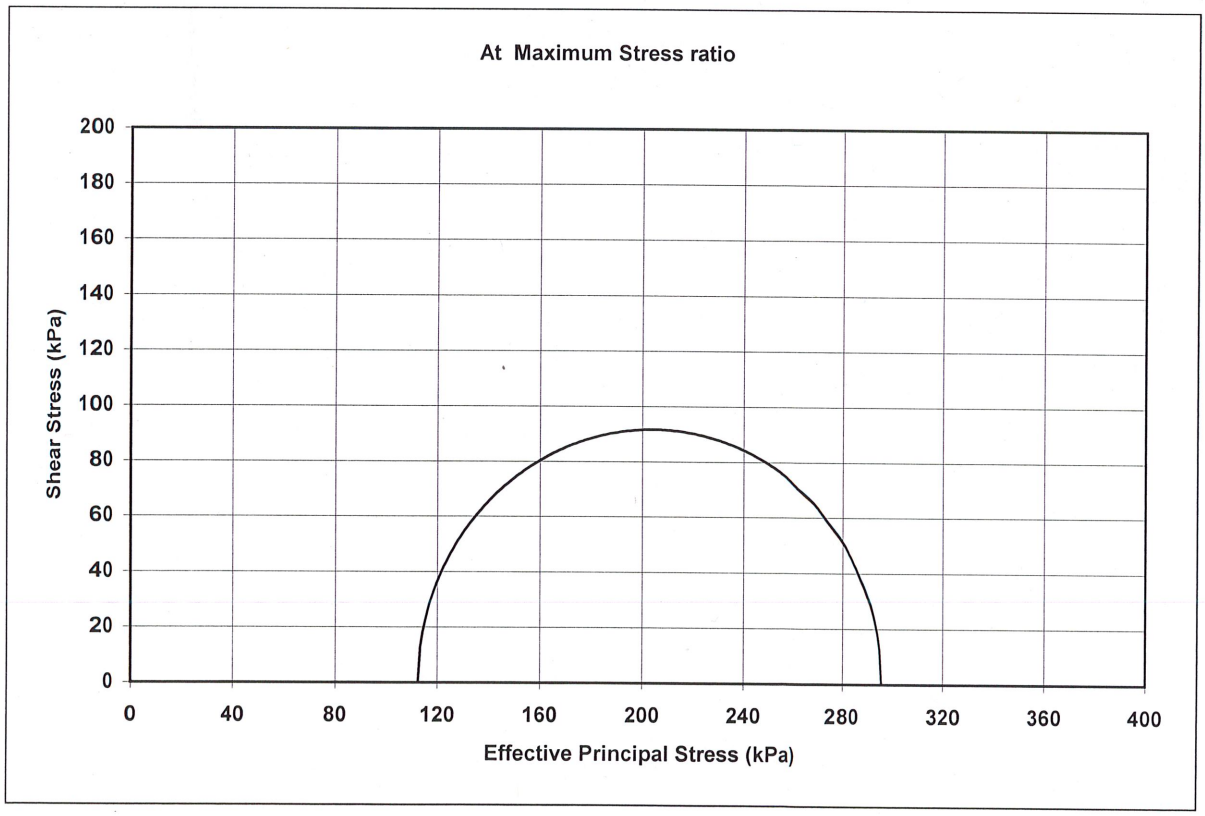
FAILURE MODE

PROJECT No : 4339 CLIENT : AECOM

PROJECT : Preliminary Onshore Ground Investigation

HOLE : MS\BH04 SAMPLE No : U41 DEPTH (m) : 14.85





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CONSOLIDATED UNDRAINED TRIAXIAL WITH MEASUREMENT OF PORE WATER PRESSURE

B.S. 1377 : Part 8 : 1990 : Clauses 3,4,5,6 and 7

PROJECT No : 4339 **CLIENT : AECOM**

PROJECT : Preliminary Onshore Ground Investigation for NZT

HOLE : MS\BH04 **SAMPLE No : U48** **DEPTH (m) : 17.80**

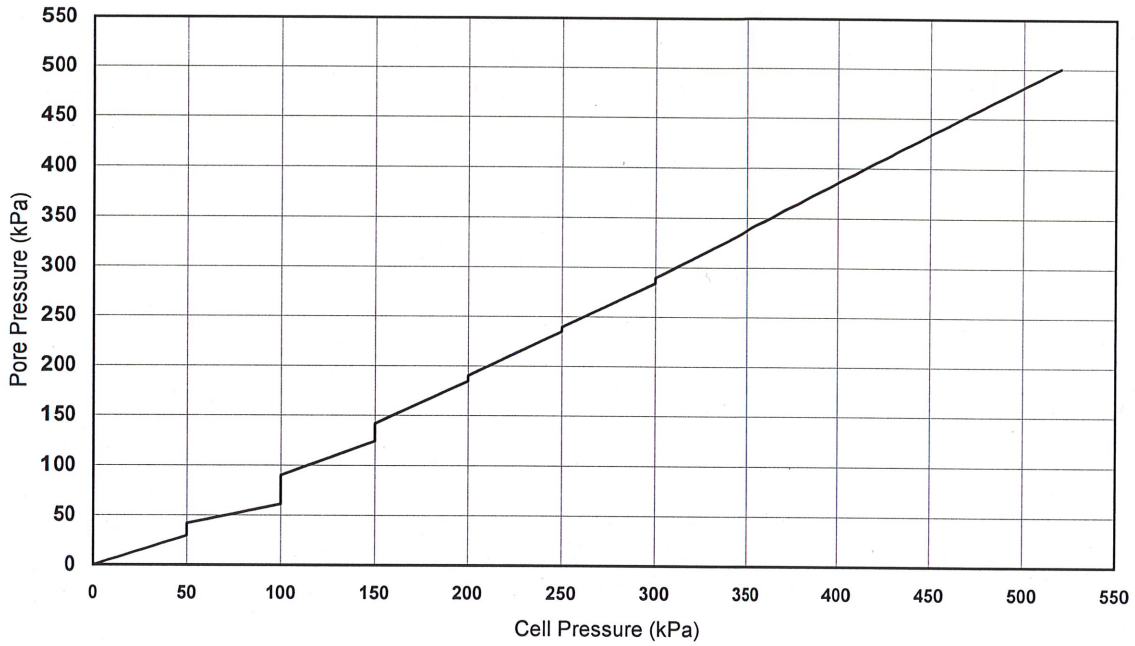
TEST SPECIMEN PREPARATION	Undisturbed	
Specific Depth (m)	: 17.82	
Orientation within original sample	: Vertical	
Description	: Please refer to sample description sheet.	
TEST SPECIMEN DETAILS	*Stage*	1
Length	*mm*	200.0
Diameter	*mm*	101.2
Moisture Content	*%*	18.1
Bulk Density	*Mg/m^3*	2.17
SATURATION STAGE		
Drainage Conditions	: Both ends and radial boundary	
Final Cell Pressure	*kPa*	520
Final Pore Pressure	*kPa*	500.7
Final Pore Pressure Parameter B		0.96
Duration	*day(s)*	2
CONSOLIDATION STAGE		
Cell Pressure	*kPa*	520
Back Pressure	*kPa*	300
Effective Pressure	*kPa*	220
Final Pore Pressure	*kPa*	306.8
Duration	*day(s)*	3
SHEARING STAGE		
Cell Pressure	*kPa*	520
Rate of Axial Displacement	*mm/min*	0.0097
Final Moisture Content	*%*	18.0
Final Bulk Density	*Mg/m^3*	2.17
CONDITIONS AT FAILURE	*Criterion*	Maximum stress ratio
Pore Pressure	*kPa*	372
Minor Effective Principal Stress	*kPa*	148
Deviator Stress	*kPa*	270
Major Effective Principal Stress	*kPa*	419
Effective Principal Stress Ratio		2.82
Pore Pressure Parameter A		0.24
Axial Strain	*%*	3.7
Correction applied to Principal Stress	*kPa*	3.3
Duration	*Days*	3

PROJECT No : 4339 CLIENT : AECOM

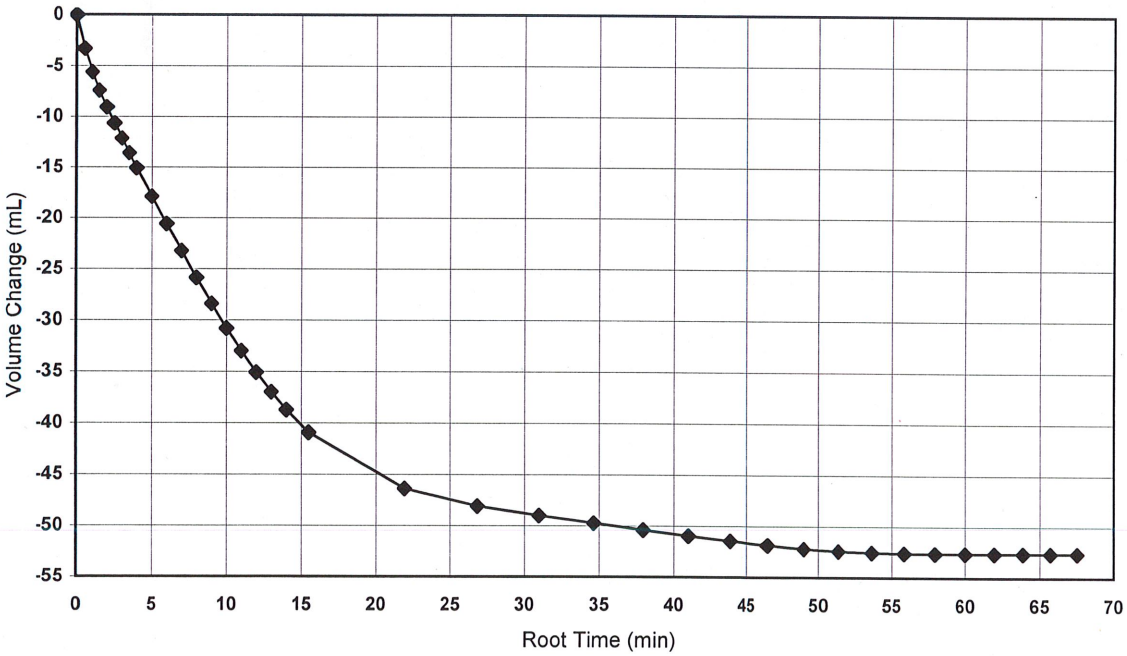
PROJECT : Preliminary Onshore Ground Investigation for NZT

HOLE : MS\BH04 SAMPLE No : U48 DEPTH (m) : 17.80

SATURATION STAGE



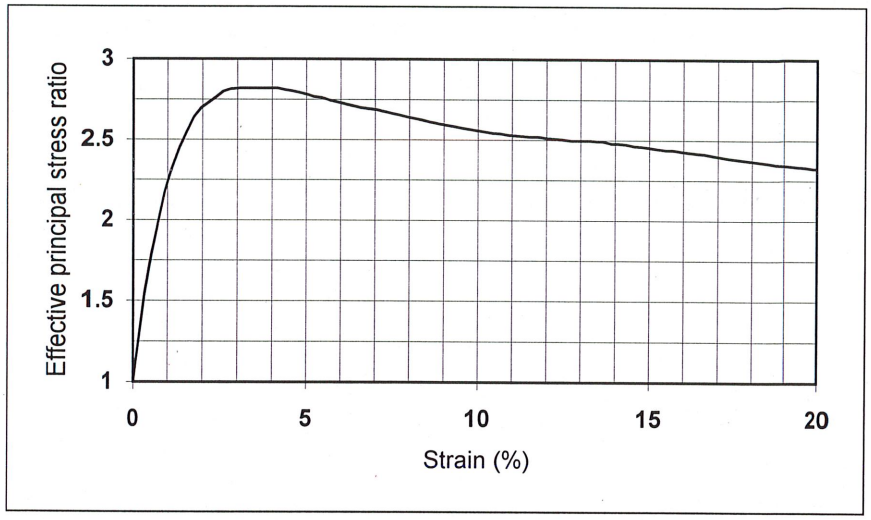
CONSOLIDATION STAGE



PROJECT No : 4339 **CLIENT : AECOM**

PROJECT : Preliminary Onshore Ground Investigation for NZT

HOLE : MS\BH04 **SAMPLE No : U48** **DEPTH (m) : 17.80**

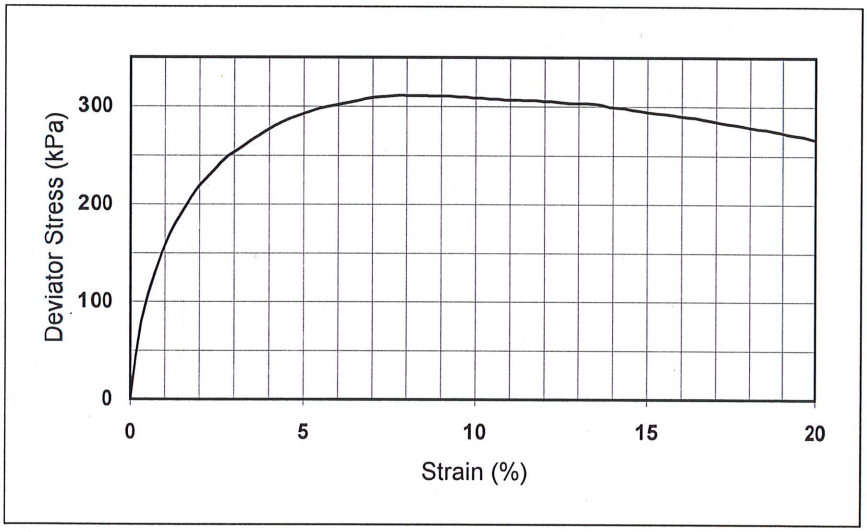


Failure Conditions

Specimen 1

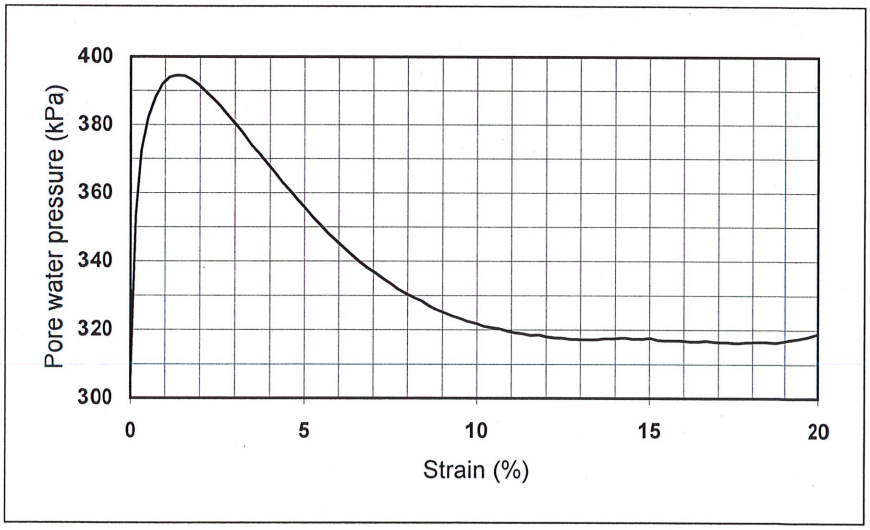
At maximum stress ratio

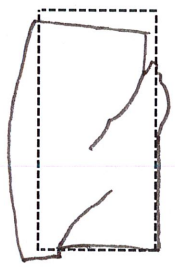
strain	3.70	%
deviator stress	270.2	*kPa*
stress ratio	2.82	



At maximum deviator stress

strain	7.72	%
deviator stress	311.3	*kPa*
stress ratio	2.66	



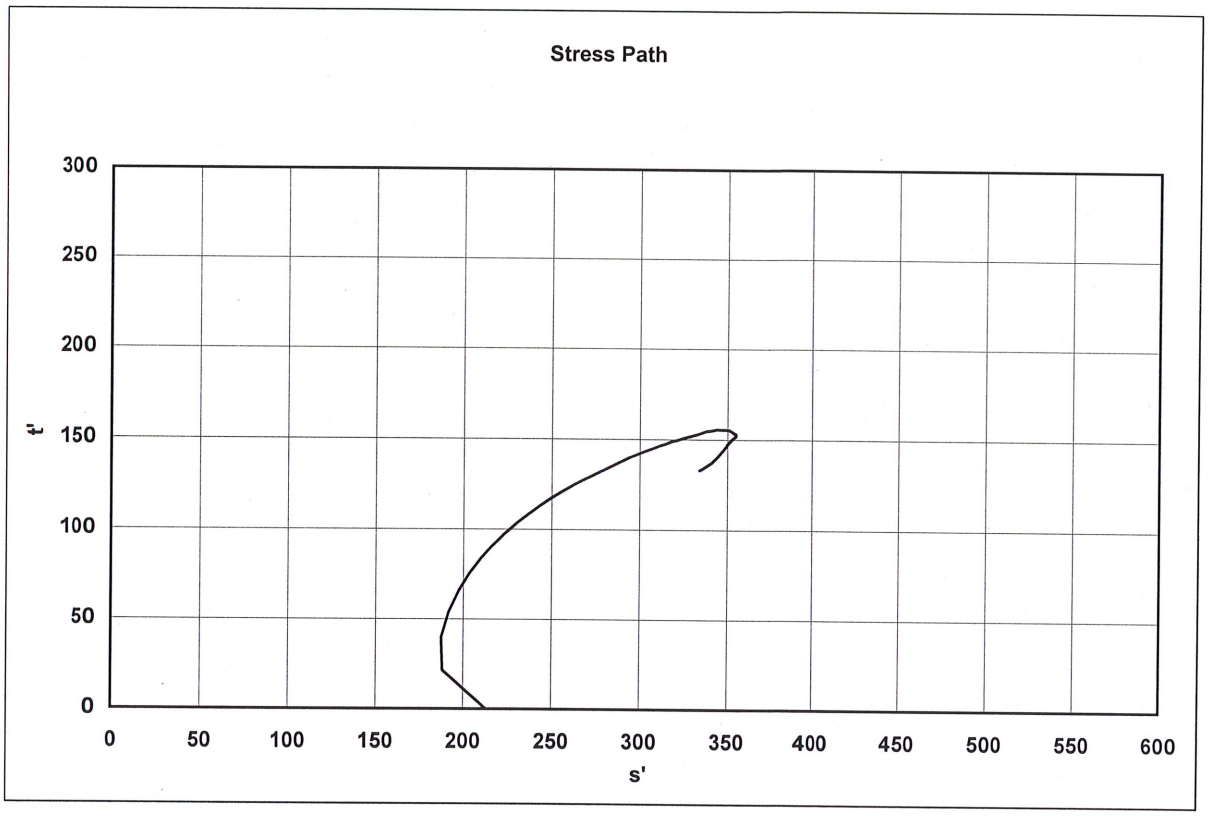


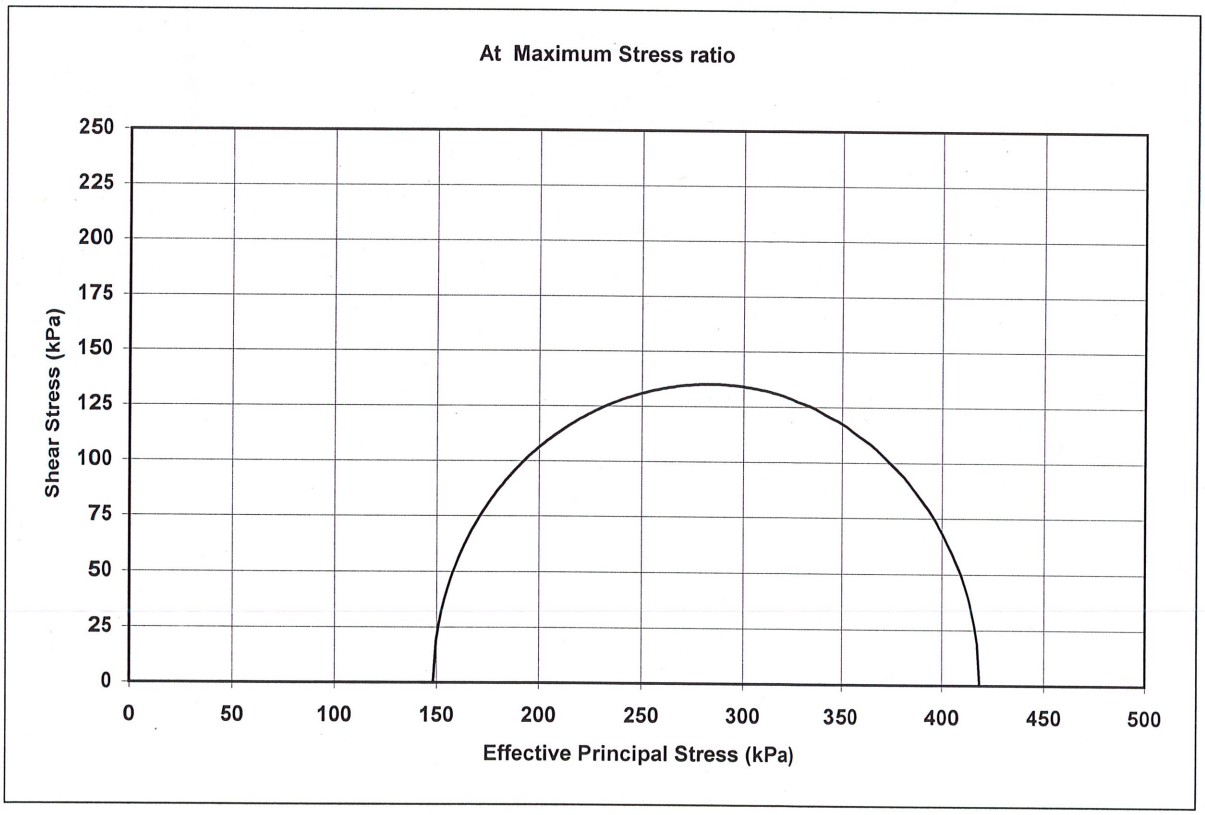
FAILURE MODE

PROJECT No : 4339 CLIENT : AECOM

PROJECT : Preliminary Onshore Ground Investigation for NZT

HOLE : MS\BH04 SAMPLE No : U48 DEPTH (m) : 17.80





ALLIED EXPLORATION AND GEOTECHNICS LIMITED

Unit 25 Stella Gill Industrial Estate,
Pelton Fell, Chester le Street, DH2 2RG.

CONSOLIDATED UNDRAINED TRIAXIAL WITH MEASUREMENT OF PORE WATER PRESSURE

B.S. 1377 : Part 8 : 1990 : Clauses 3,4,5,6 and 7

PROJECT No : 4339 **CLIENT : AECOM**

PROJECT : Preliminary Onshore Ground Investigation for NZT

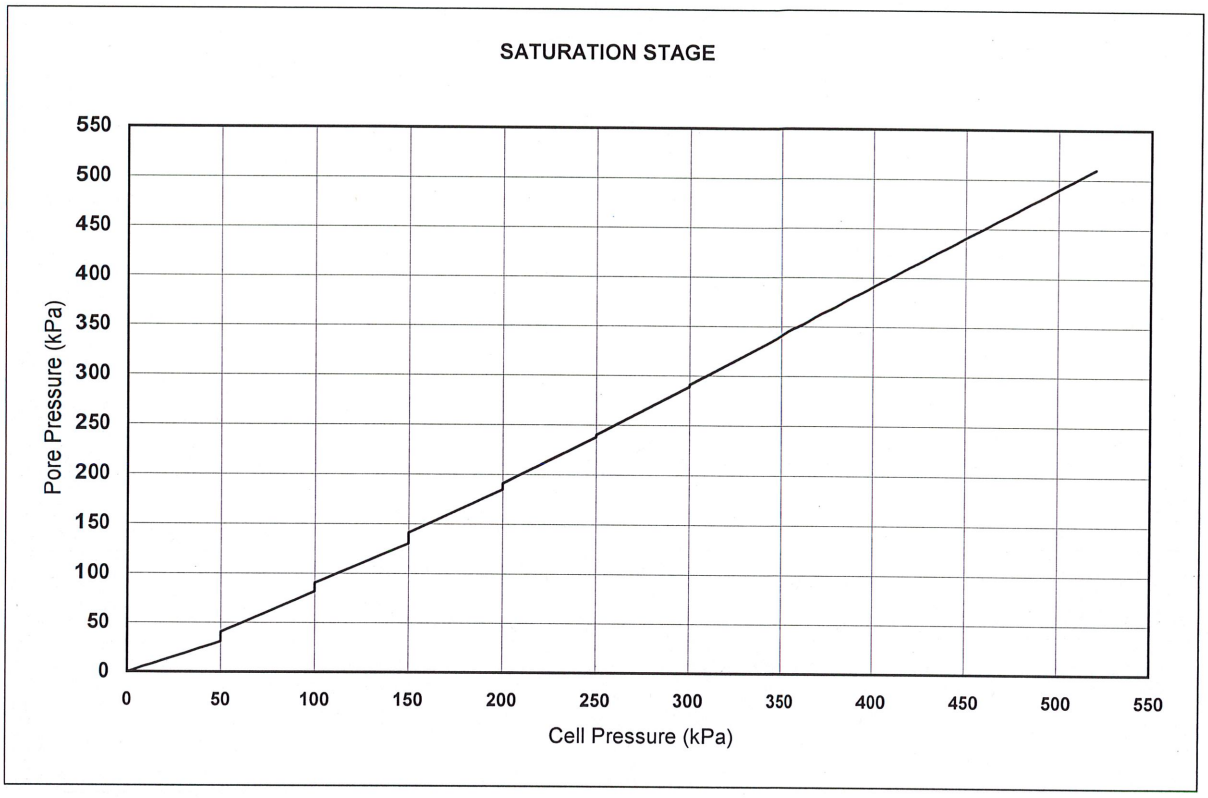
HOLE : MS\BH05 **SAMPLE No : C7** **DEPTH (m) : 18.30**

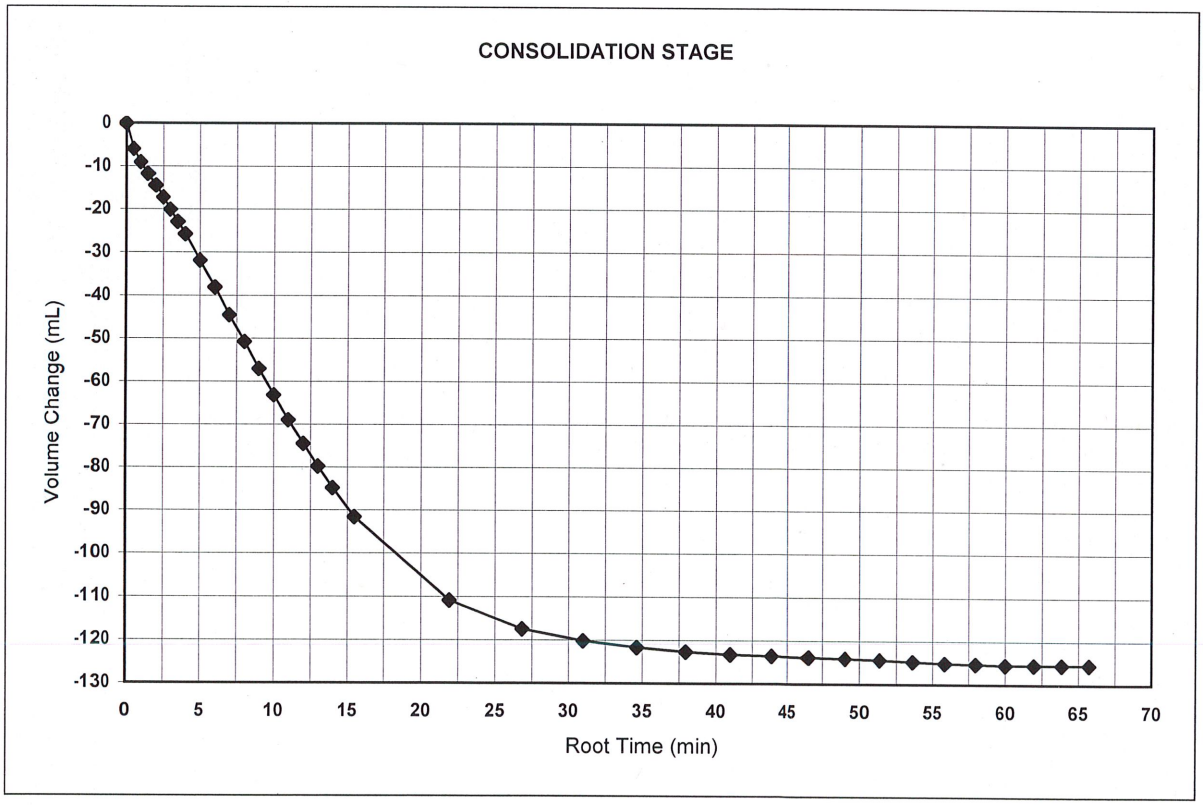
TEST SPECIMEN PREPARATION	Undisturbed	
Specific Depth (m)	: 18.32	
Orientation within original sample	: Vertical	
Description	: Please refer to sample description sheet.	
TEST SPECIMEN DETAILS	*Stage*	1
Length	*mm*	200.5
Diameter	*mm*	102.6
Moisture Content	*%*	28.3
Bulk Density	*Mg/m^3*	2.00
SATURATION STAGE		
Drainage Conditions	: Both ends and radial boundary	
Final Cell Pressure	*kPa*	520
Final Pore Pressure	*kPa*	510.3
Final Pore Pressure Parameter B		0.998
Duration	*day(s)*	2
CONSOLIDATION STAGE		
Cell Pressure	*kPa*	520
Back Pressure	*kPa*	300
Effective Pressure	*kPa*	220
Final Pore Pressure	*kPa*	300
Duration	*day(s)*	3
SHEARING STAGE		
Cell Pressure	*kPa*	520
Rate of Axial Displacement	*mm/min*	0.00749
Final Moisture Content	*%*	25.0
Final Bulk Density	*Mg/m^3*	1.95
CONDITIONS AT FAILURE	*Criterion*	Maximum stress ratio
Pore Pressure	*kPa*	407
Minor Effective Principal Stress	*kPa*	113
Deviator Stress	*kPa*	170
Major Effective Principal Stress	*kPa*	283
Effective Principal Stress Ratio		2.51
Pore Pressure Parameter A		0.63
Axial Strain	*%*	8.6
Correction applied to Principal Stress	*kPa*	4.9
Duration	*Days*	3

PROJECT No : 4339 **CLIENT : AECOM**

PROJECT : Preliminary Onshore Ground Investigation for NZT

HOLE : MS\BH05 **SAMPLE No : C7** **DEPTH (m) : 18.30**

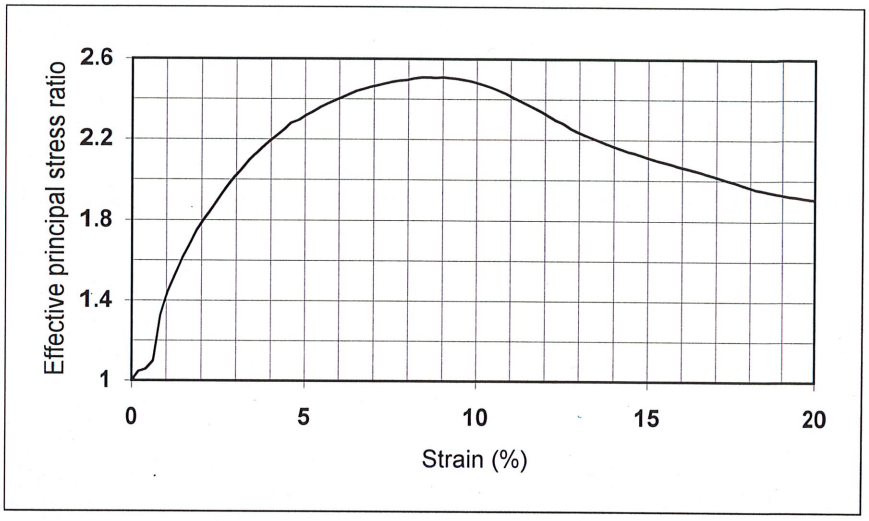




PROJECT No : 4339 **CLIENT : AECOM**

PROJECT : Preliminary Onshore Ground Investigation for NZT

HOLE : MS\BH05 **SAMPLE No : C7** **DEPTH (m) : 18.30**

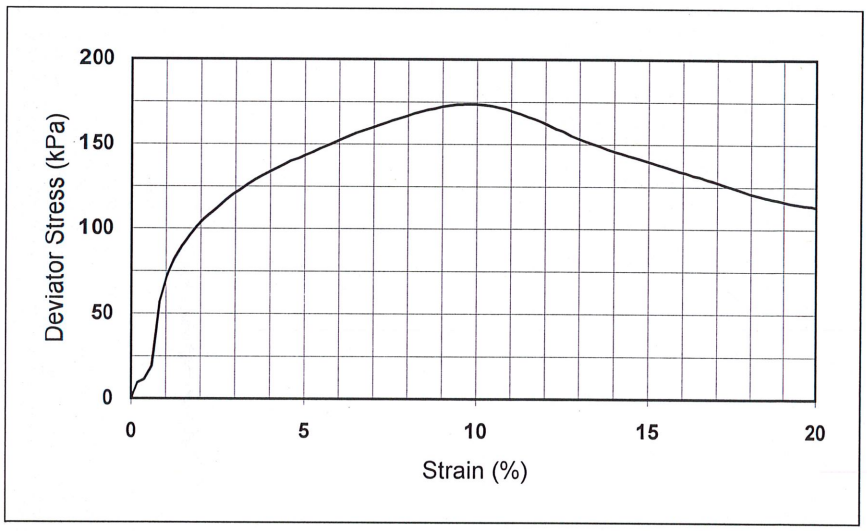


Failure Conditions

Specimen 1

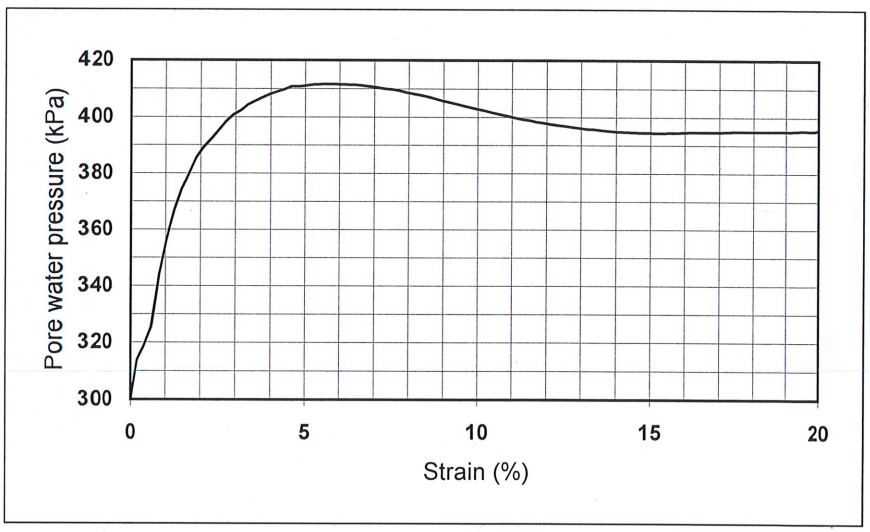
At maximum stress ratio

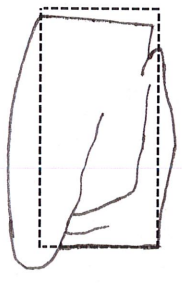
strain	8.58	%
deviator stress	170.4	*kPa*
stress ratio	2.51	



At maximum deviator stress

strain	9.82	%
deviator stress	173.8	*kPa*
stress ratio	2.49	



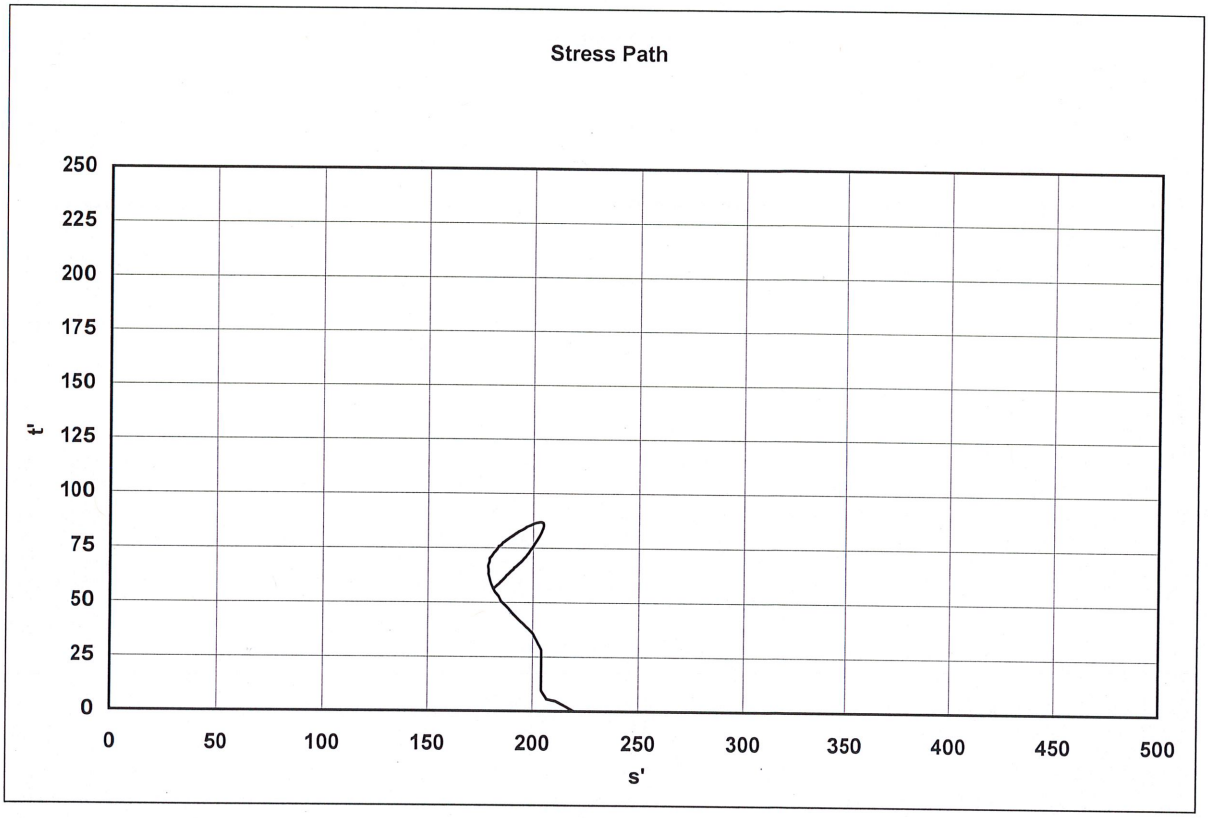


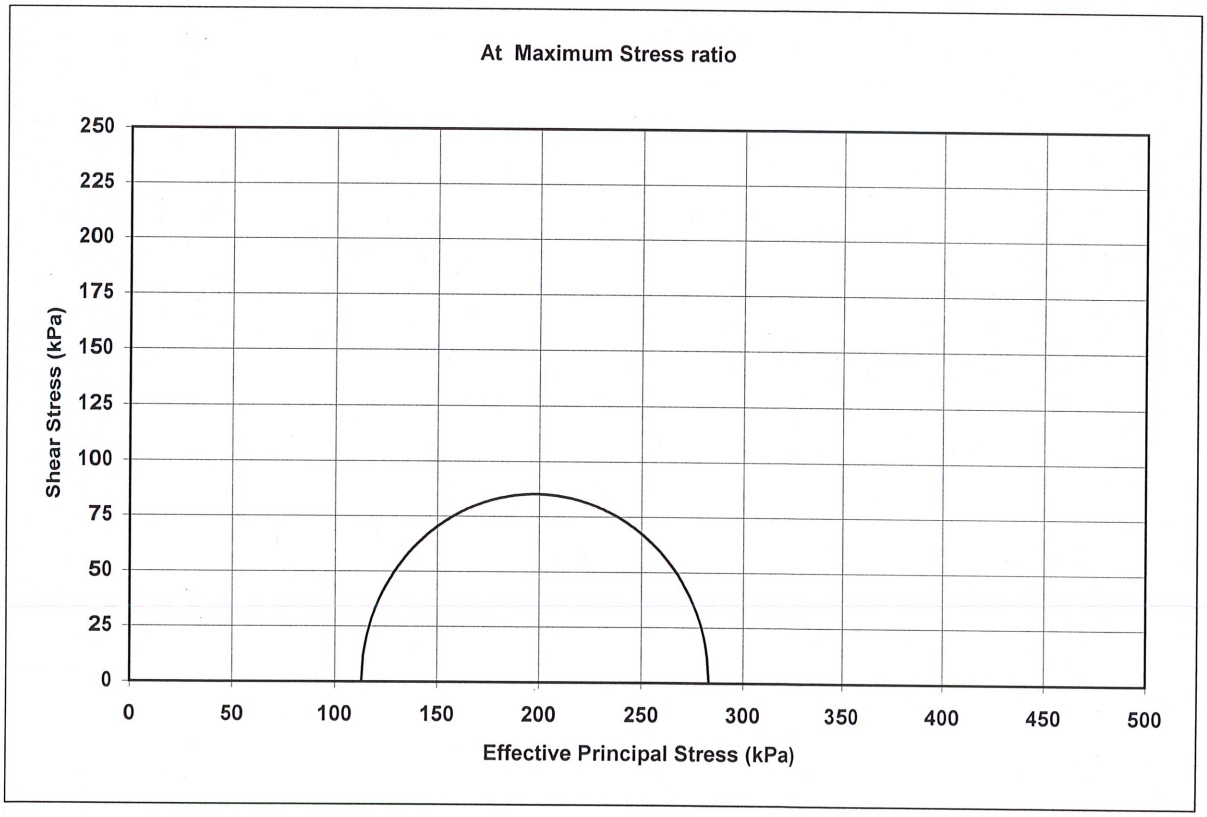
FAILURE MODE

PROJECT No : 4339 CLIENT : AECOM

PROJECT : Preliminary Onshore Ground Investigation for NZT

HOLE : MS\BH05 SAMPLE No : C7 DEPTH (m) : 18.30





ALLIED EXPLORATION AND GEOTECHNICS LIMITED

Unit 25 Stella Gill Industrial Estate,
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CONSOLIDATED UNDRAINED TRIAXIAL WITH MEASUREMENT OF PORE WATER PRESSURE

B.S. 1377 : Part 8 : 1990 : Clauses 3,4,5,6 and 7

PROJECT No : 4339 **CLIENT : AECOM**

PROJECT : Preliminary Onshore Ground Investigation for NZT

HOLE : MS\BH07 **SAMPLE No : U54** **DEPTH (m) : 17.10**

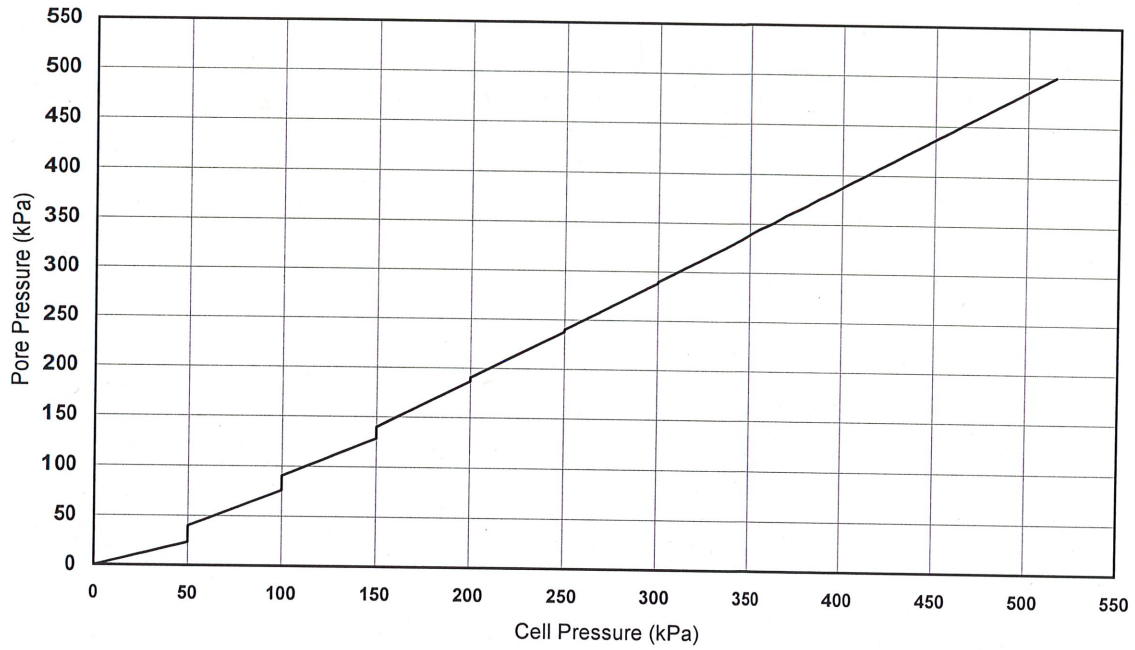
TEST SPECIMEN PREPARATION	Undisturbed	
Specific Depth (m)	: 17.38	
Orientation within original sample	: Vertical	
Description	: Please refer to sample description sheet.	
TEST SPECIMEN DETAILS	*Stage*	1
Length	*mm*	200.4
Diameter	*mm*	101.3
Moisture Content	*%*	20.3
Bulk Density	*Mg/m^3*	2.10
SATURATION STAGE		
Drainage Conditions	: Both ends and radial boundary	
Final Cell Pressure	*kPa*	515
Final Pore Pressure	*kPa*	500
Final Pore Pressure Parameter B		0.98
Duration	*day(s)*	2
CONSOLIDATION STAGE		
Cell Pressure	*kPa*	515
Back Pressure	*kPa*	300
Effective Pressure	*kPa*	215
Final Pore Pressure	*kPa*	299.6
Duration	*day(s)*	2
SHEARING STAGE		
Cell Pressure	*kPa*	515
Rate of Axial Displacement	*mm/min*	0.01378
Final Moisture Content	*%*	3368.0
Final Bulk Density	*Mg/m^3*	2.09
CONDITIONS AT FAILURE	*Criterion*	Maximum stress ratio
Pore Pressure	*kPa*	376
Minor Effective Principal Stress	*kPa*	139
Deviator Stress	*kPa*	303
Major Effective Principal Stress	*kPa*	442
Effective Principal Stress Ratio		3.18
Pore Pressure Parameter A		0.25
Axial Strain	*%*	3.5
Correction applied to Principal Stress	*kPa*	3.1
Duration	*Days*	2

PROJECT No : 4339 CLIENT : AECOM

PROJECT : Preliminary Onshore Ground Investigation for NZT

HOLE : MS\BH07 SAMPLE No : U54 DEPTH (m) : 17.10

SATURATION STAGE



CONSOLIDATION STAGE