REV 00

Geotechnical Site Investigation Report

Demo · Riverbank Industrial Estate

Demo Site — Riverbank Industrial Estate

JOB REF. DEMO-2026-001

PREPARED FOR
SoilLab Demo Client Ltd.

PREPARED BY
SoilLab Sample Report

DATE
10/13/2026

DISTRIBUTION
—

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TERMS OF REFERENCE & SCOPE

The Client commissioned this ground investigation to determine the subsurface conditions at the site and to provide geotechnical parameters and foundation recommendations for the proposed development.

The scope of works comprised exploratory boring, in-situ testing, sampling, laboratory testing and geotechnical reporting in accordance with the applicable standards for the site and methods used (e.g. BS 5930, BS 1377, BS EN ISO 22475/22476, ASTM D1586/D5778 and AASHTO), as relevant to the works actually undertaken.

LIMITATIONS & DISCLAIMER

This report has been prepared for the exclusive use of the Client named herein, for the specific project and scope described. It must not be relied upon by any third party without written consent.

The conclusions and recommendations are based on the ground conditions encountered at the specific exploratory positions on the dates of investigation. Ground conditions may vary between and beyond those positions; any variation encountered during construction should be reported immediately so that the recommendations can be reviewed.

Groundwater levels are those observed at the time of the fieldwork and are subject to seasonal and tidal variation. Laboratory results relate only to the samples tested.

SL

SoilLab Sample Report

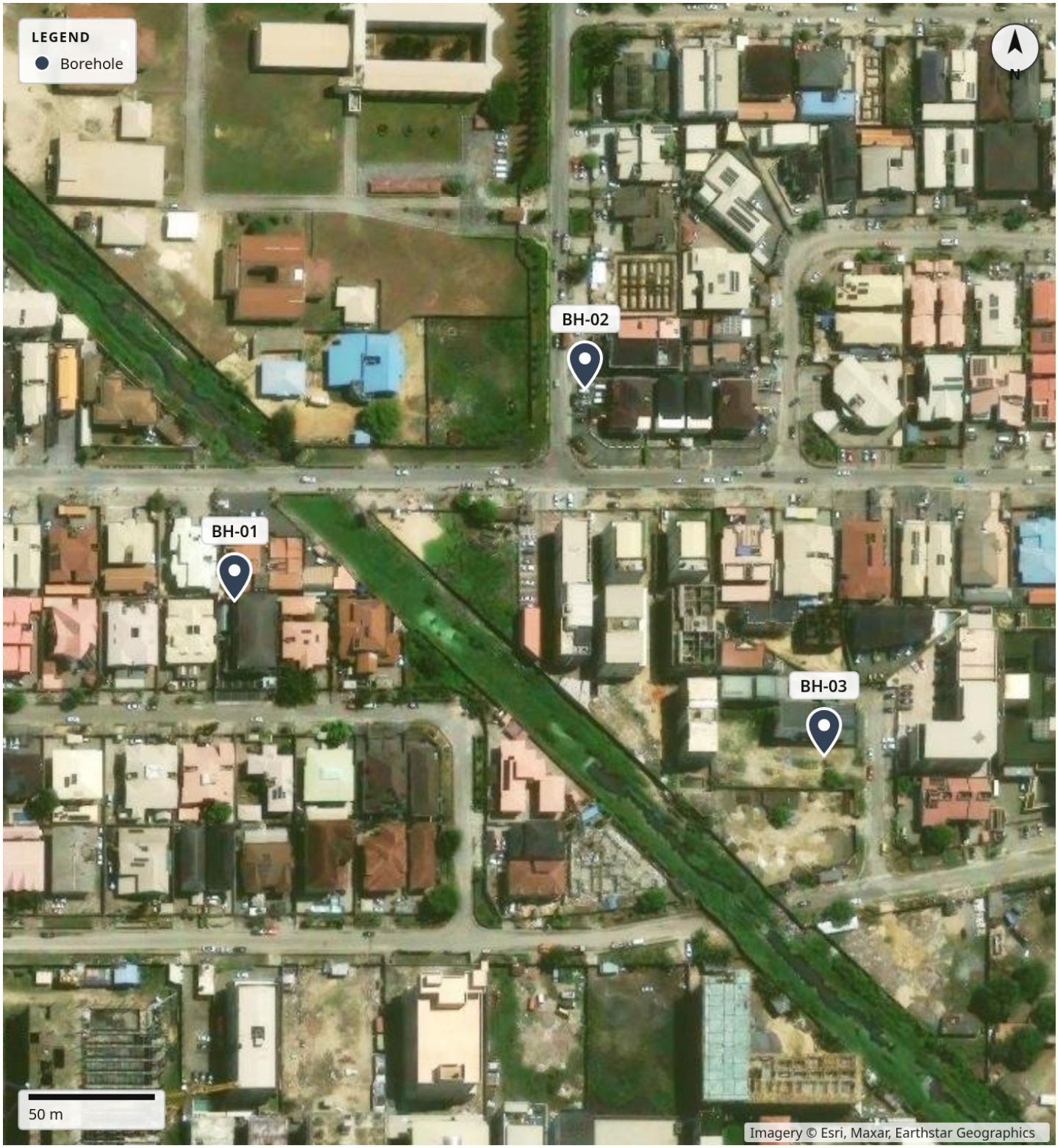
Geotechnical workspace — borehole to foundation report

Sample report — demonstration data only · +234 912 929 2666 · hello@soillab.online · https://soillab.online

GEOTECHNICAL INVESTIGATION REPORT

PROJECT Demo · Riverbank Industrial Estate	JOB REF. DEMO-2026-001
CLIENT SoilLab Demo Client Ltd.	LOCATION Demo Site — Riverbank Industrial Estate
DATE 10/13/2026	BOREHOLES 3

SITE LOCATION PLAN



Hole	Easting	Northing	Latitude	Longitude	Fix
BH-01	552104.5	712105.2	6.442150	3.471200	Handheld GPS (±3 m)
BH-02	552242.6	712188.3	6.442900	3.472450	Handheld GPS (±3 m)
BH-03	552336.7	712044.6	6.441600	3.473300	Total station tie-in

Grid reference system: WGS84 geographic (lat/lon)

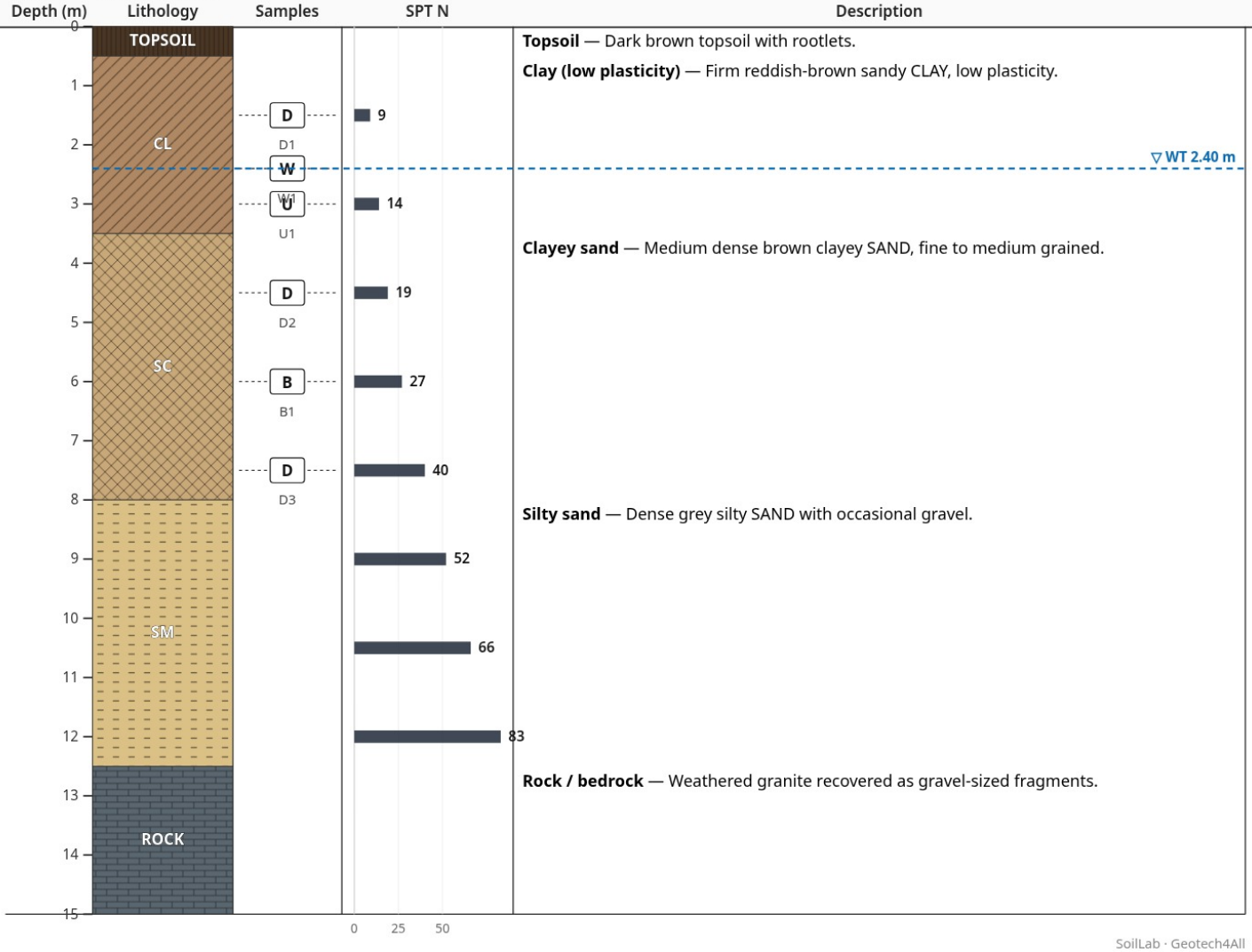
BOREHOLE LOGS

BH-01 · GL 100 m · WT 2.4 m · 15 m total

BOREHOLE LOG — BH-01

Project: Demo · Riverbank Industrial Estate
Client: SoilLab Demo Client Ltd.
Location: Demo Site — Riverbank Industrial Estate
Logger: — · Date: 2026-08-07

Method: Shell & Auger
Diameter: 150 mm
GL: 100.00 m
Total depth: 15.00 m
Water table: 2.40 m



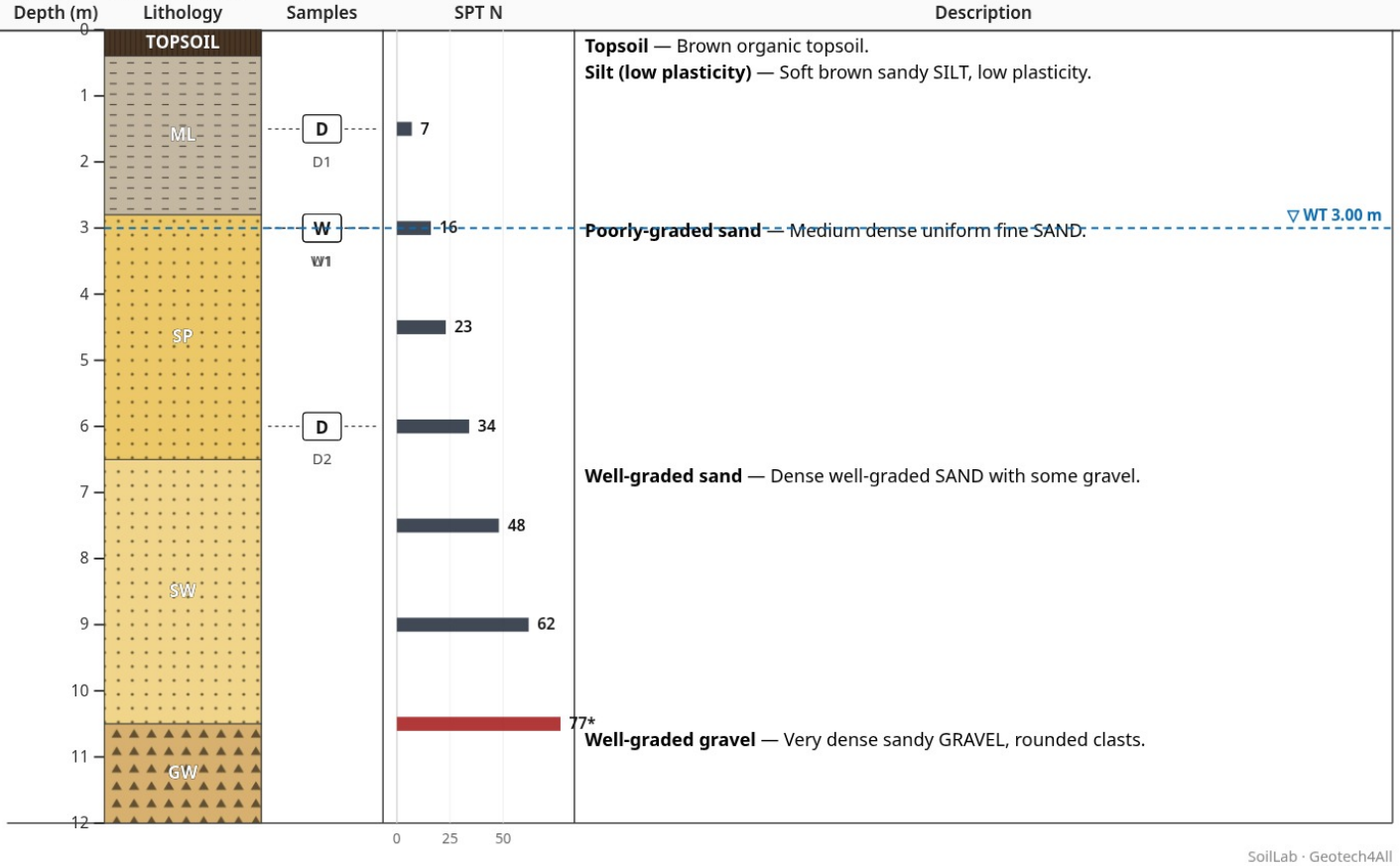
SoilLab · Geotech4All

BH-02 · GL 100.6 m · WT 3 m · 12 m total

BOREHOLE LOG — BH-02

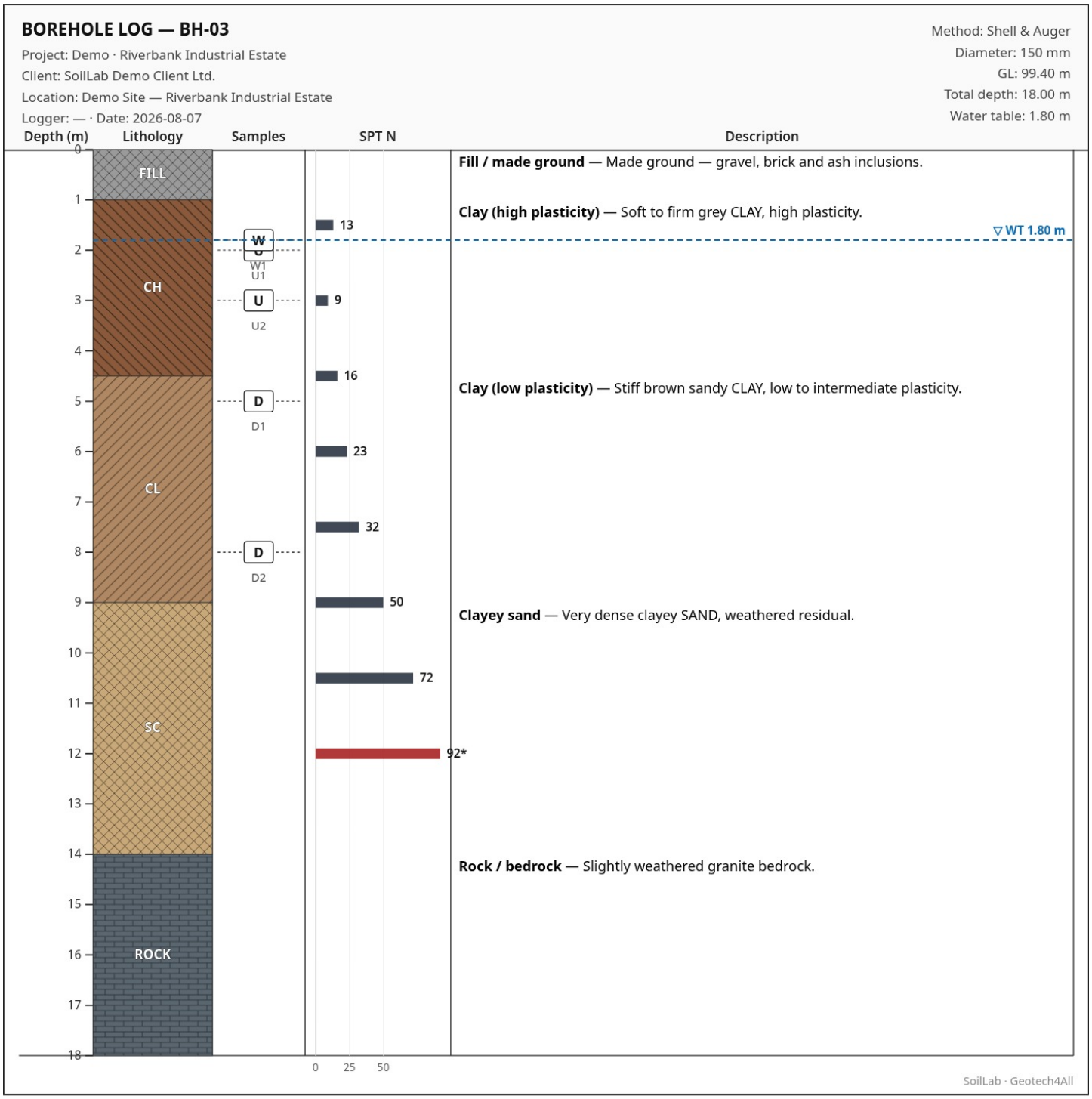
Project: Demo · Riverbank Industrial Estate
Client: SoilLab Demo Client Ltd.
Location: Demo Site — Riverbank Industrial Estate
Logger: — · Date: 2026-08-07

Method: Shell & Auger
Diameter: 150 mm
GL: 100.60 m
Total depth: 12.00 m
Water table: 3.00 m



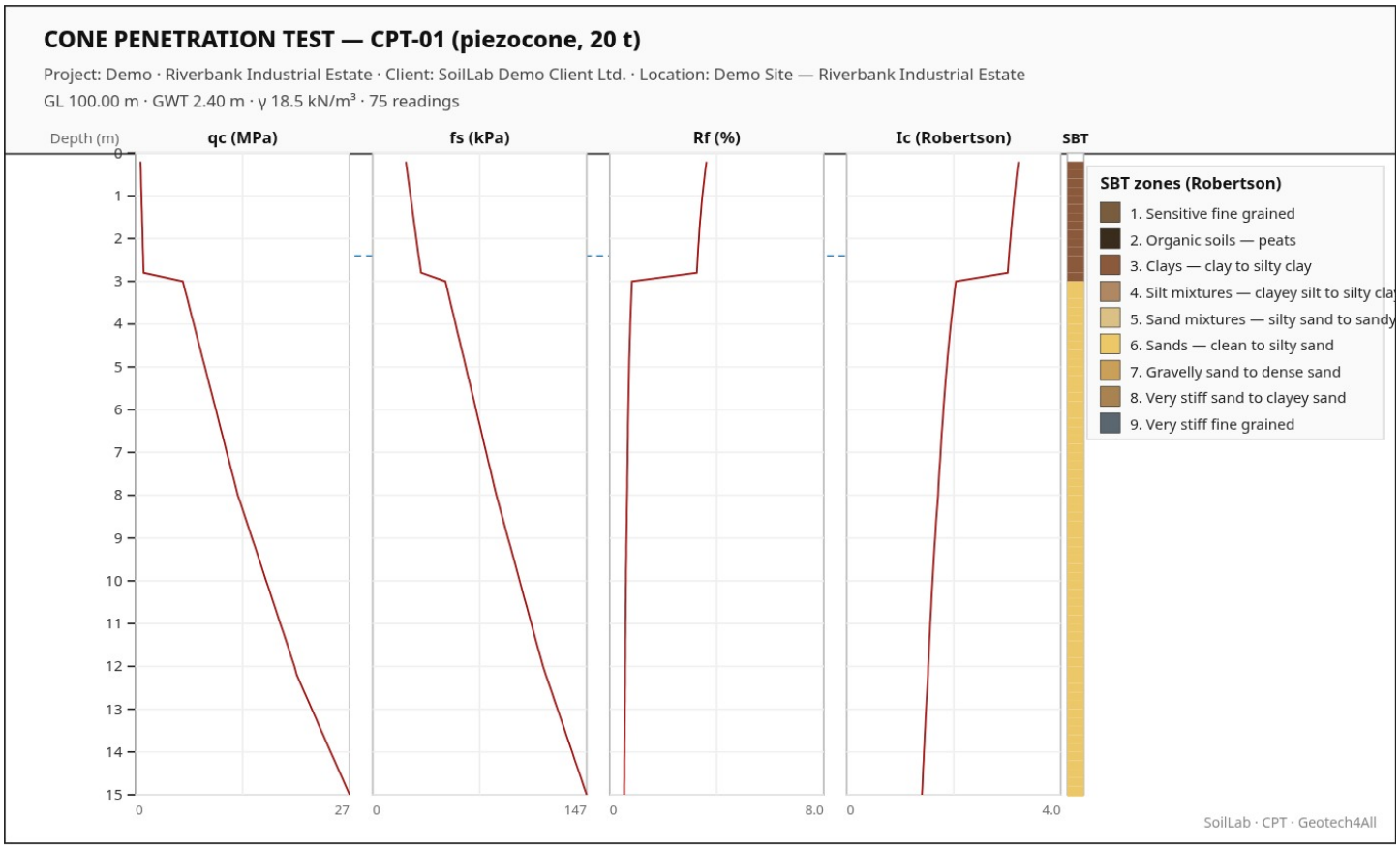
SoilLab · Geotech4All

BH-03 · GL 99.4 m · WT 1.8 m · 18 m total

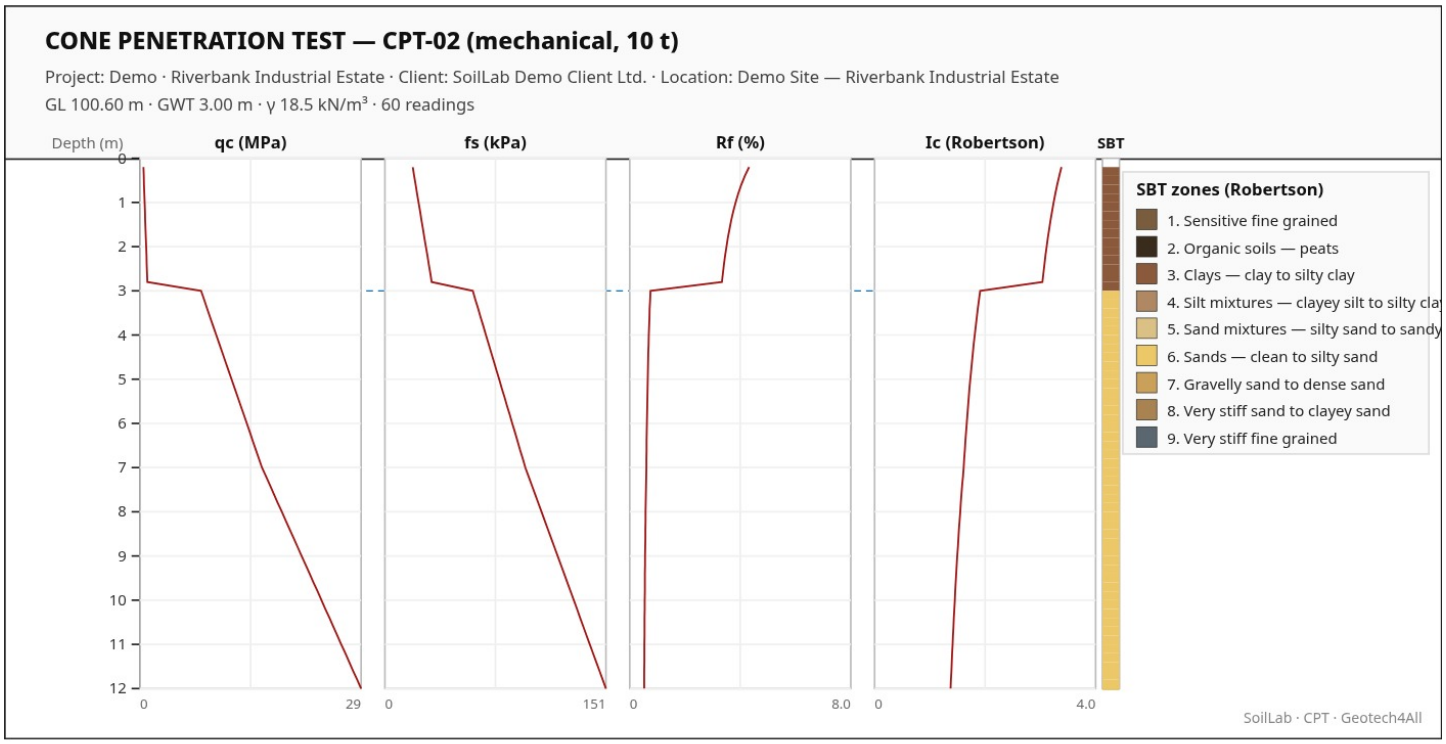


CPT PROFILES

CPT-01 (piezocone, 20 t) · BH-01



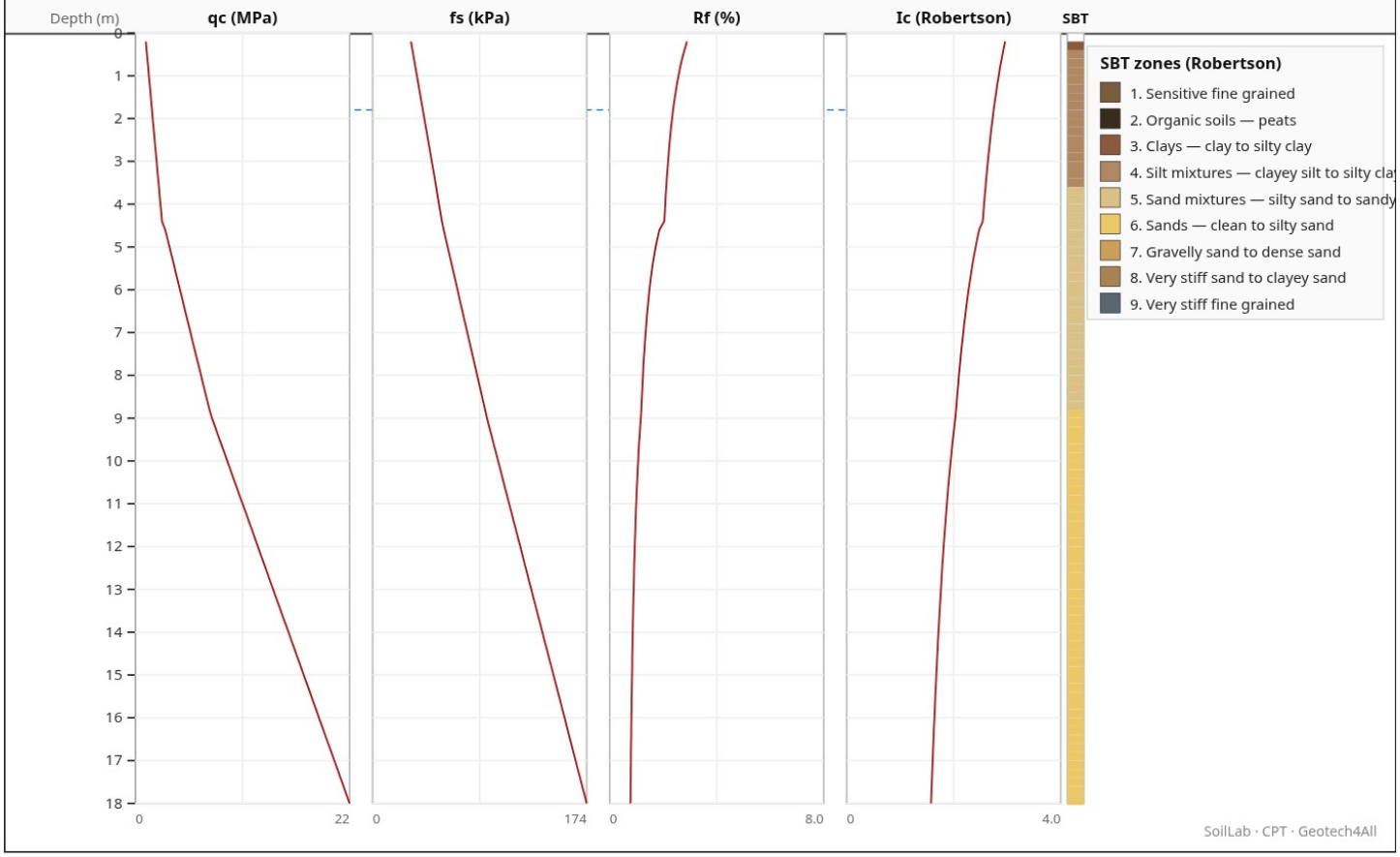
CPT-02 (mechanical, 10 t) · BH-02



DCP-03 (dynamic, 5 t) · BH-03

CONE PENETRATION TEST — DCP-03 (dynamic, 5 t)

Project: Demo · Riverbank Industrial Estate · Client: SoilLab Demo Client Ltd. · Location: Demo Site — Riverbank Industrial Estate
GL 99.40 m · GWT 1.80 m · γ 18.5 kN/m³ · 90 readings

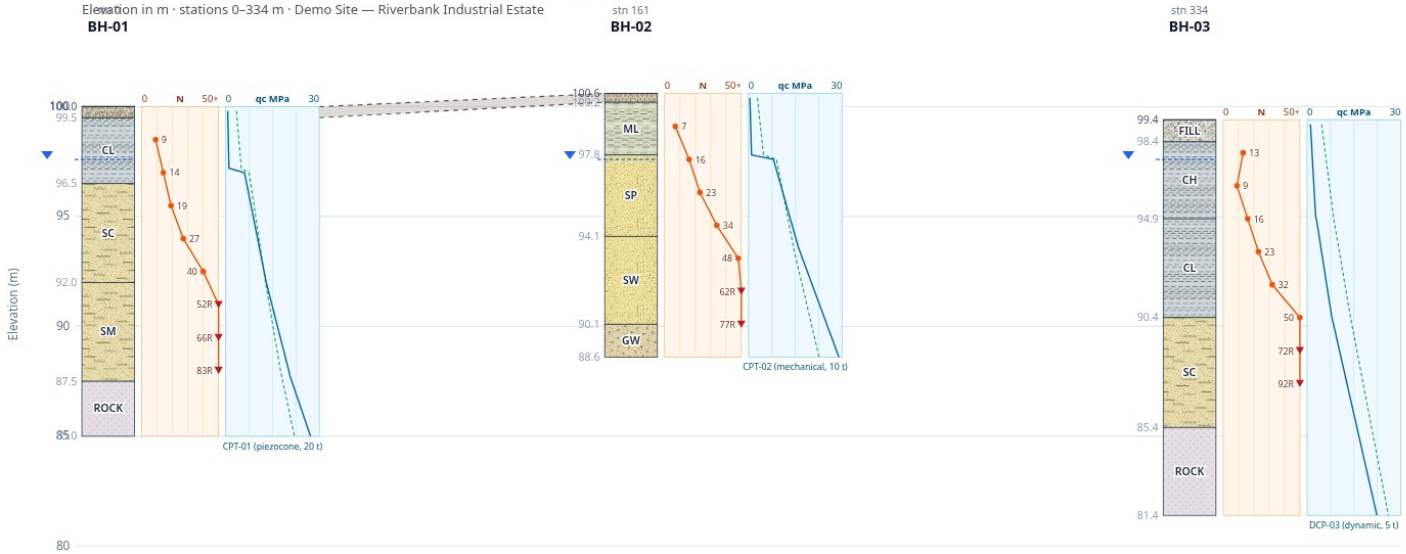


SoilLab · CPT · Geotech4All

CROSS-SECTION

Cross-section A–A' (Demo Site — Riverbank Industrial Estate)

Elevation in m · stations 0–334 m · Demo Site — Riverbank Industrial Estate



Legend (USCS) — USGS/FGDC patterns

TOPSOIL	Dark brown topsoil with rootlets.	CL	Firm reddish-brown sandy CLAY, low plasticity.	SC	Medium dense brown clayey SAND, fine to medium...
SM	Dense grey silty SAND with occasional gravel.	ROCK	Weathered granite recovered as gravel-sized fr...	ML	Soft brown sandy SILT, low plasticity.
SP	Medium dense uniform fine SAND.	SW	Dense well-graded SAND with some gravel.	GW	Very dense sandy GRAVEL, rounded clasts.
FILL	Made ground — gravel, brick and ash inclusions.	CH	Soft to firm grey CLAY, high plasticity.		

SPT N (blows / 300 mm, scale 0–50) · refusal / N > 50 · CPT qc (0–30 MPa) · fs (0–200 kPa)

FIELD TESTS

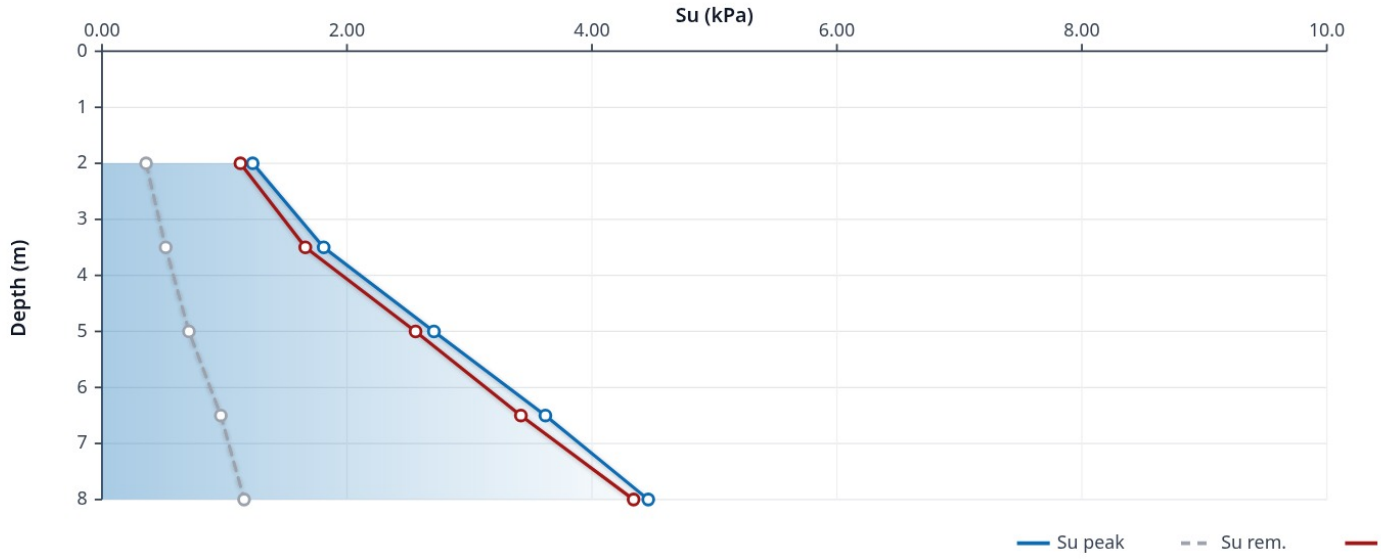
Vane Shear Test (VST)

Depth (m)	Su peak (kPa)	Su rem (kPa)	Sensitivity	μ	Su design (kPa)
2	1.23	0.36	3.45	0.92	1.13
3.5	1.81	0.52	3.5	0.92	1.66
5	2.71	0.71	3.82	0.95	2.56
6.5	3.62	0.97	3.73	0.95	3.42
8	4.46	1.16	3.83	0.98	4.34

VST — SU VS DEPTH

Peak, remoulded, and Bjerrum-corrected design Su (kPa)

EXPORT



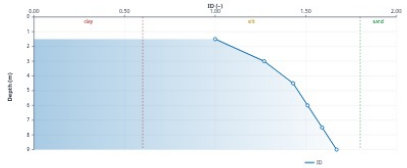
Flat Dilatometer (DMT)

Depth	ID	KD	ED (MPa)	M (MPa)	Material	Su (kPa)	ϕ′ (°)
1.5	1	6.67	6.25	13.09	silt	—	—
3	1.27	6.54	13.88	28.92	silt	—	—
4.5	1.43	8.63	25.68	60.53	silt	—	—
6	1.51	10.89	40.95	105.73	silt	—	—
7.5	1.59	13.08	60.73	167.48	silt	—	—
9	1.67	15	84.32	243.46	silt	—	—

DMT — ID (MATERIAL INDEX)

EXPORT

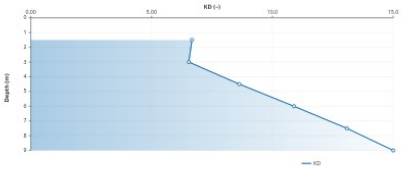
Clay <0.6 · Silt 0.6–1.8 · Sand >1.8



DMT — KD

Horizontal stress index

EXPORT



DMT — M (CONSTRAINED MODULUS)

EXPORT

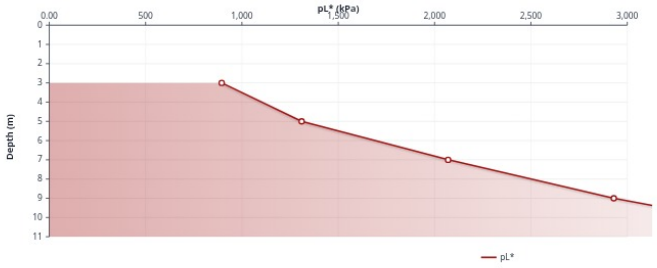


Pressuremeter Test (PMT)

Depth	pL* (kPa)	EM (MPa)	EM/pL*	q allow (kPa)
3	895	14	15.64	895
5	1310	22	16.79	1310
7	2070	34	16.43	4140
9	2930	48	16.38	5860
11	3990	65	16.29	7980

PMT — NET LIMIT PRESSURE PL*

EXPORT



PMT — MÉNARD MODULUS EM

EXPORT

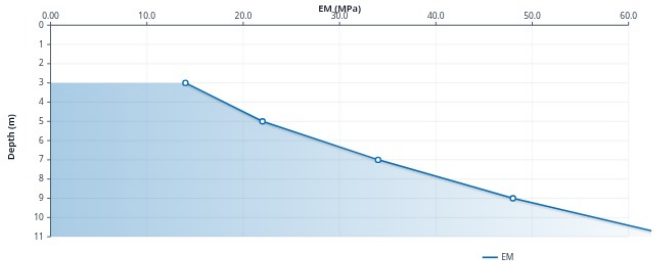


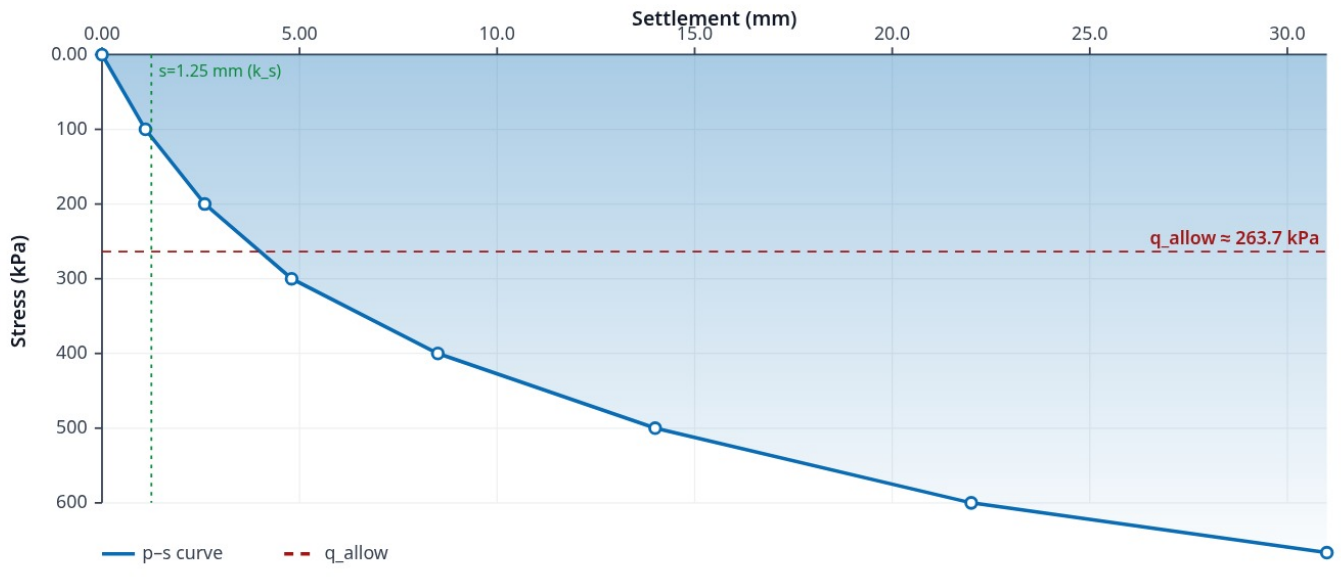
Plate Load Test (PLT)

k_s (kN/m³)	q_ult (kPa)	q_allow (kPa)	Footing settlement (mm)
88,000,000	659.3	263.7	12.1

PLT — LOAD–SETTLEMENT (P–S)

Stress (load/area) on Y, downward; settlement on X

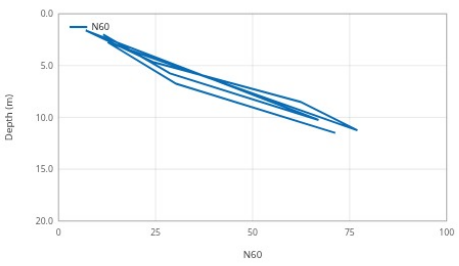
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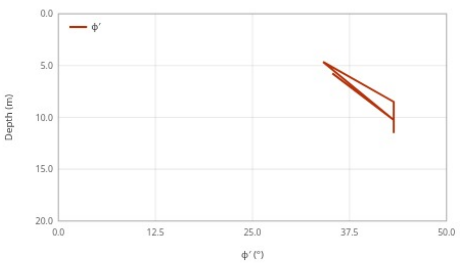


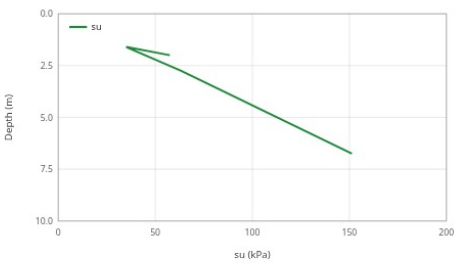
SOIL CLASSIFICATION & DERIVED PARAMETERS

Hole	From (m)	To (m)	USCS	σ′v (kPa)	N60	(N1)60	State	ϕ′ (°)	su (kPa)	Ic	SBT
BH-01	0	0.5	TOPSOIL	4.5	—	—	—	—	—	3.2	Clays — clay to silty clay
BH-01	0.5	3.5	CL	36	11.5	19.2	Stiff	—	57.5	2.87	Silt mixtures — clayey silt to silty clay
BH-01	3.5	8	SC	70.6	28.7	34.1	Medium dense	35.3	—	1.83	Sands — clean to silty sand
BH-01	8	12.5	SM	107.5	67	64.6	Very dense	43.2	—	1.6	Sands — clean to silty sand
BH-01	12.5	15	ROCK	136.2	—	—	—	—	—	1.45	Sands — clean to silty sand
BH-02	0	0.4	TOPSOIL	3.6	—	—	—	—	—	3.36	Clays — clay to silty clay
BH-02	0.4	2.8	ML	28.8	7	11.9	Firm	—	35	3.17	Clays — clay to silty clay
BH-02	2.8	6.5	SP	67.5	24.3	29.6	Medium dense	34.1	—	1.83	Sands — clean to silty sand
BH-02	6.5	10.5	SW	99	62.3	62.6	Very dense	43.2	—	1.53	Sands — clean to silty sand
BH-02	10.5	12	GW	121.6	77	69.8	Very dense	43.2	—	1.4	Sands — clean to silty sand
BH-03	0	1	FILL	9	—	—	—	—	—	2.9	Silt mixtures — clayey silt to silty clay
BH-03	1	4.5	CH	40.2	12.7	20	Stiff	—	63.3	2.67	Silt mixtures — clayey silt to silty clay
BH-03	4.5	9	CL	72.9	30.3	35.4	Hard	—	151.3	2.22	Sand mixtures — silty sand to sandy silt
BH-03	9	14	SC	111.8	71.3	67.5	Very dense	43.2	—	1.85	Sands — clean to silty sand
BH-03	14	18	ROCK	148.7	—	—	—	—	—	1.64	Sands — clean to silty sand

Derived from logged strata with γ = 18 kN/m³ and energy ratio 0.6. Correlations: Peck/Hansbo (ϕ′), su ≈ 5·N60, Robertson (1990) SBT.







LABORATORY TESTING

Test	Standard	Hole	Sample	Depth (m)	Date	Status
Atterberg Limits	BS 1377-2: 1990	BH-01	D1	1 – 1.45	2026-08-07	FINAL
Cone Penetrometer (LL)	BS 1377-2: 1990	BH-01	D1	1 – 1.45	2026-08-07	FINAL
Specific Gravity	BS 1377-2: 1990	BH-01	D2	2 – 2.45	2026-08-07	FINAL
Sieve Analysis (grading data)	BS 1377-2: 1990	BH-01	D3	3 – 3.45	2026-08-07	FINAL
Hydrometer Calibration	BS 1377-2: 1990	BH-01	D3	3 – 3.45	2026-08-07	FINAL
Hydrometer Test	BS 1377-2: 1990	BH-01	D3	3 – 3.45	2026-08-07	FINAL
Compaction (Proctor)	BS 1377-4: 1990	TP-01	B1	0.5 – 1.5	2026-08-07	FINAL
CBR	BS 1377-4: 1990	TP-01	B1	0.5 – 1.5	2026-08-07	FINAL
Permeability	BS 1377-6: 1990	BH-02	U1	4 – 4.75	2026-08-07	FINAL
Shear Box	BS 1377-7: 1990	BH-02	U2	5 – 5.75	2026-08-07	FINAL
Consolidation	BS 1377-7: 1990	BH-02	U3	6 – 6.75	2026-08-07	FINAL
Triaxial	BS 1377-8: 1990	BH-02	U4	7 – 7.75	2026-08-07	FINAL

LABORATORY TEST SHEETS

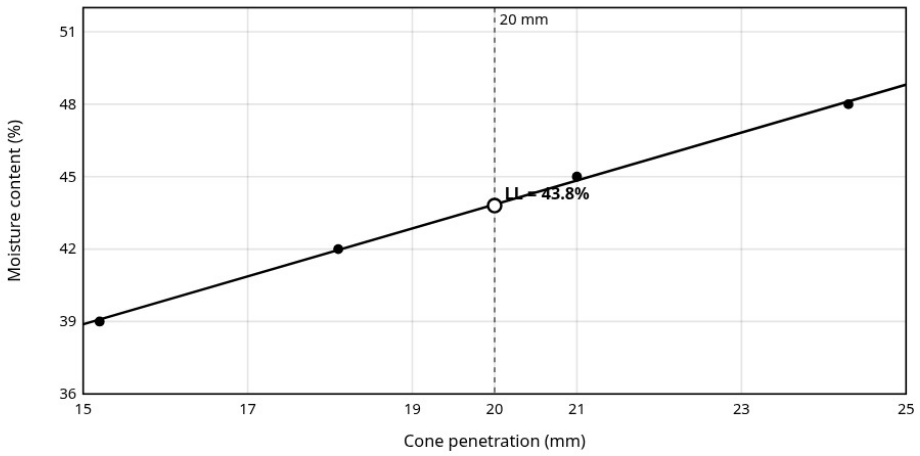
Atterberg Limits · BH-01 / D1 · BS 1377-2: 1990

LL METHOD Cone penetrometer (BS 1377-2 cl. 4.3)

LIQUID LIMIT — CONE PENETROMETER

#	Container ID	Wet+cont. (g)	Dry+cont. (g)	Container (g)	Cone pen. (mm)	MC (%)
1	L1	42.8	35	15	15.2	**39.0**
2	L2	43.4	35	15	18.1	**42.0**
3	L3	44	35	15	21	**45.0**
4	L4	44.6	35	15	24.3	**48.0**

FLOW CURVE

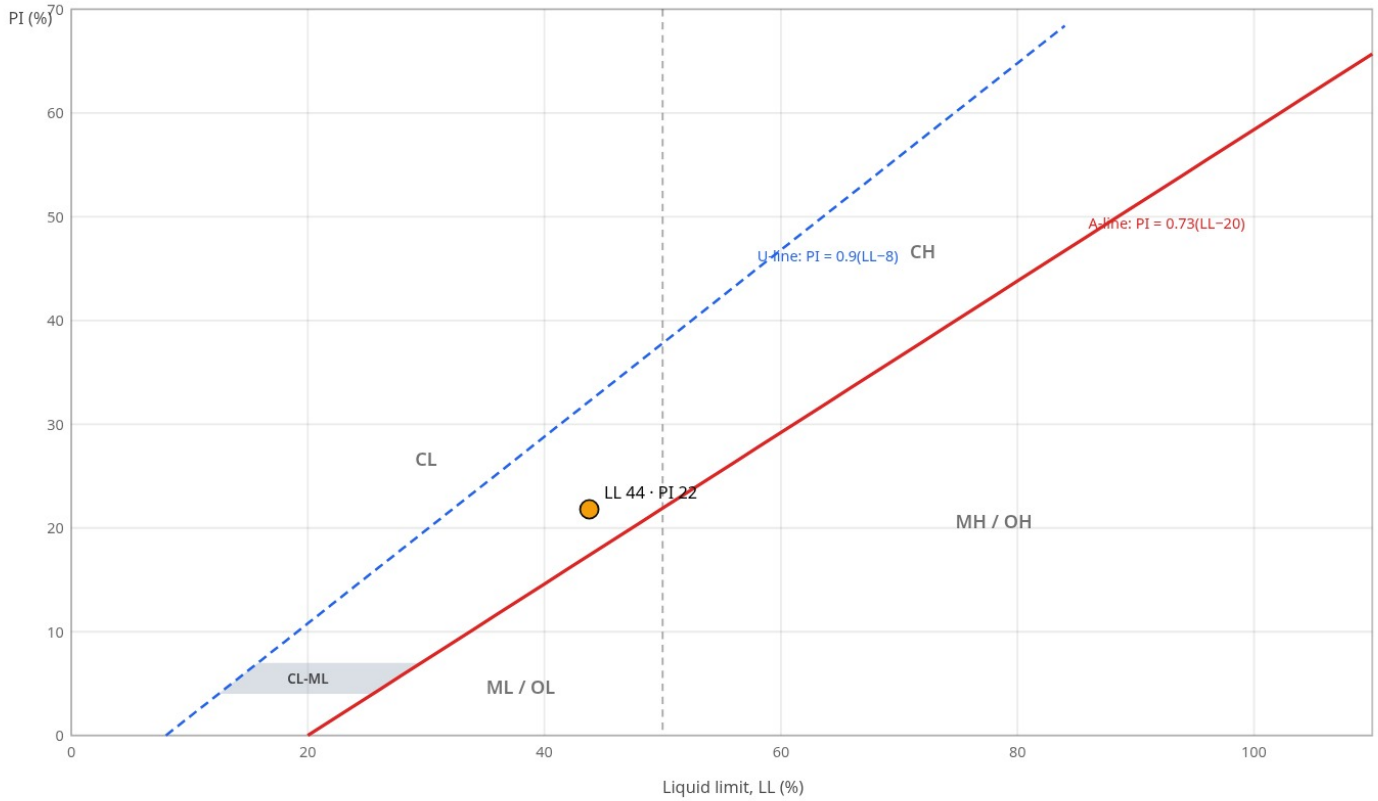


PLASTIC LIMIT

#	Container ID	Wet+cont. (g)	Dry+cont. (g)	Container (g)	MC (%)
1	P1	24.15	22	12	**21.5**
2	P2	24.25	22	12	**22.5**

LIQUID LIMIT, LL (%)	PLASTIC LIMIT, PL (%)	PLASTICITY INDEX, PI (%)
43.8	**22.0**	**21.8**

CASAGRANDE PLASTICITY CHART



Casagrande (1948) classification using the calculated liquid limit and plasticity index.

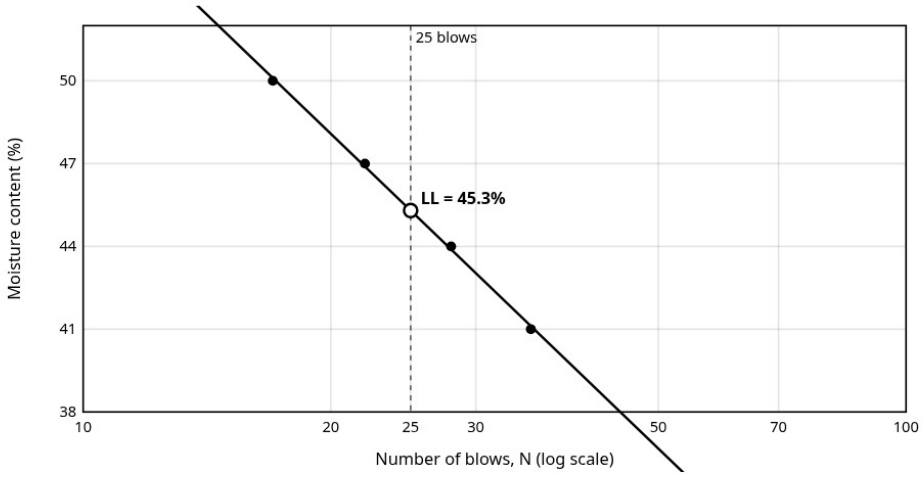
Cone Penetrometer (LL) · BH-01 / D1 · BS 1377-2: 1990

LL METHOD Cone penetrometer (BS 1377-2 cl. 4.3)

LIQUID LIMIT — CASAGRANDE APPARATUS

#	Container ID	Wet+cont. (g)	Dry+cont. (g)	Container (g)	Blows (N)	MC (%)
1	C1	43.2	35	15	35	**41.0**
2	C2	43.8	35	15	28	**44.0**
3	C3	44.4	35	15	22	**47.0**
4	C4	45	35	15	17	**50.0**

FLOW CURVE

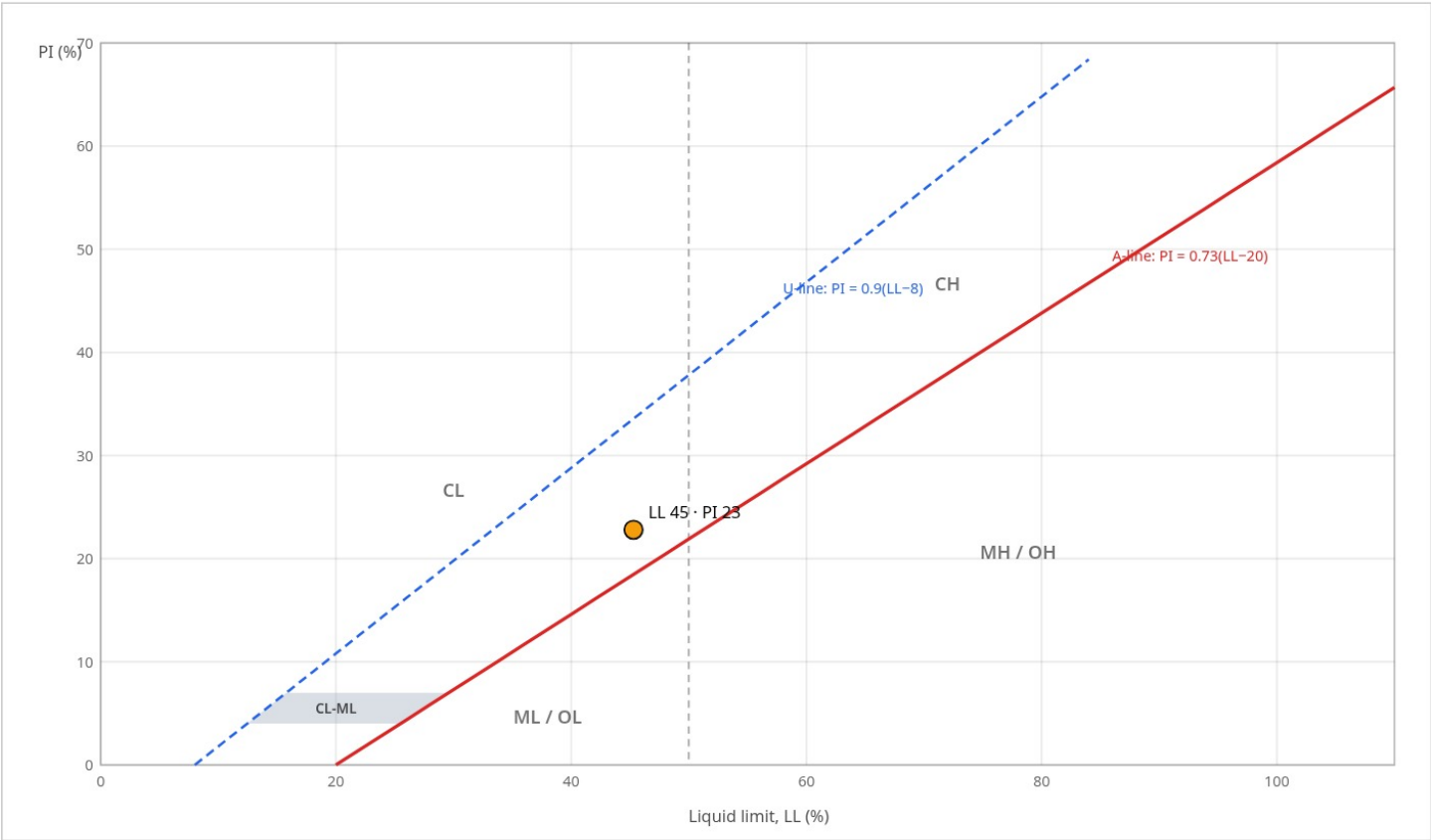


PLASTIC LIMIT

#	Container ID	Wet+cont. (g)	Dry+cont. (g)	Container (g)	MC (%)
1	P1	24.2	22	12	**22.0**
2	P2	24.3	22	12	**23.0**

LIQUID LIMIT, LL (%)	PLASTIC LIMIT, PL (%)	PLASTICITY INDEX, PI (%)
45.3	**22.5**	**22.8**

CASAGRANDE PLASTICITY CHART



Casagrande (1948) classification using the calculated liquid limit and plasticity index.

Specific Gravity · BH-01 / D2 · BS 1377-2: 1990

TEMP (°C) 22

SPECIFIC GRAVITY — SMALL PYKNOMETER (BS 1377-2:1990 CL. 8.3)

Trial	m_1 jar (g)	m_2 jar+soil (g)	m_3 jar+soil+water (g)	m_4 jar+water (g)	Gs
A	25	45	87.45	75	**2.649**
B	24.5	44	86.97	74.8	**2.66**

RESULT

MEAN GS	VALID TRIALS	TEST TEMPERATURE
2.655	**2**	**22 °C**

$G_s = (m_2 - m_1) / [(m_4 - m_1) - (m_3 - m_2)]$. Trials should agree within 0.03.

REMARKS

De-aired under vacuum for 1 h; duplicate trials agree within 0.01.

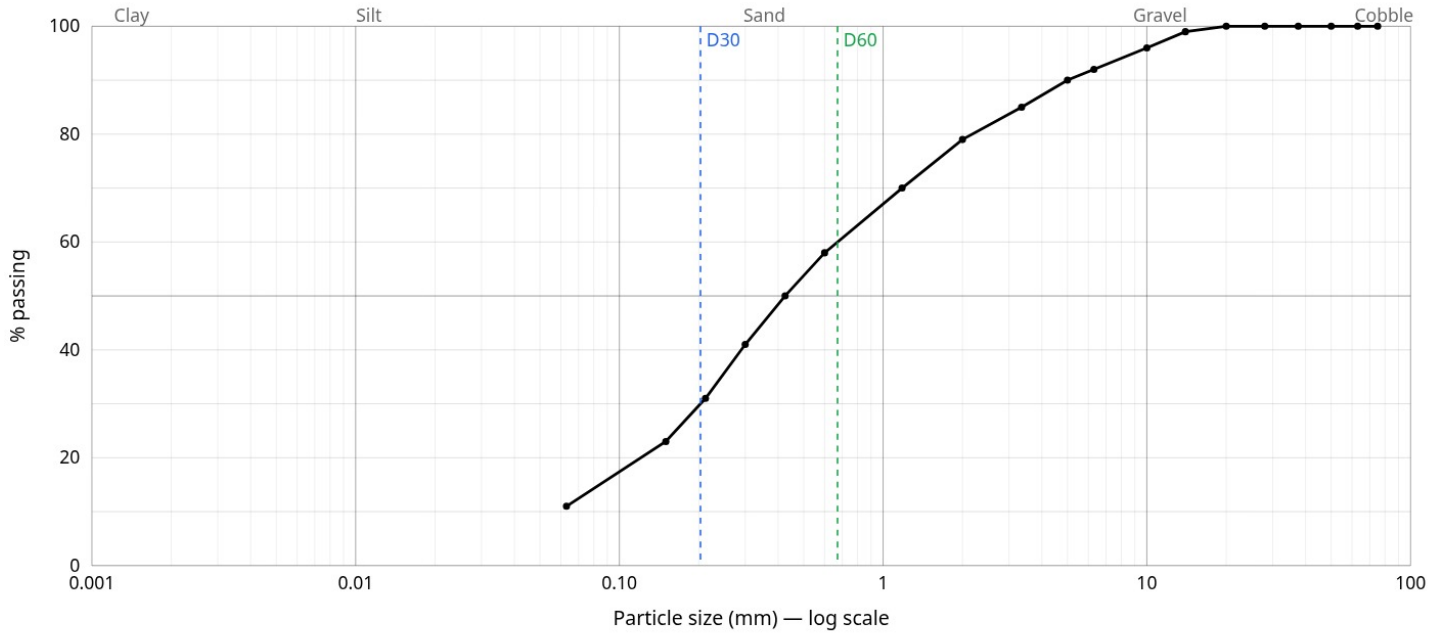
Sieve Analysis (grading data) · BH-01 / D3 · BS 1377-2: 1990

TOTAL DRY MASS (G) 500

SIEVE ANALYSIS (BS 1377-2)

Sieve (mm)	Mass retained (g)	Cum. retained (g)	% retained	% passing
75	0	0	0	100
63	0	0	0	100
50	0	0	0	100
37.5	0	0	0	100
28	0	0	0	100
20	0	0	0	100
14	5	5	1	99
10	15	20	3	96
6.3	20	40	4	92
5	10	50	2	90
3.35	25	75	5	85
2	30	105	6	79
1.18	45	150	9	70
0.6	60	210	12	58
0.425	40	250	8	50
0.3	45	295	9	41
0.212	50	345	10	31
0.15	40	385	8	23
0.063	60	445	12	11
Pan	55	500	11	0

GRADING CURVE



Sieve fraction only. Combine with a hydrometer test on the Particle Size Distribution sheet to extend the curve below 63 µm.

SUMMARY

SUM RETAINED (G)	% LOSS	TOTAL SUBMITTED (G)	D10 (MM)	D60 (MM)	CU
500	0%	500	—	0.6716	—

CC	FINES (%)	SAND (%)	GRAVEL (%)
—	11	68	21

REMARKS

Hydrometer Calibration · BH-01 / D3 · BS 1377-2: 1990

HYDROMETER CALIBRATION & SAMPLE DATA

SPECIFIC GRAVITY GS	2.65	DRY MASS PER LITRE M (G)	50	MENISCUS CORRECTION CM	0.5
DISPERSING-AGENT CORR. CD	4	CALIBRATION A (CM)	16.3	CALIBRATION B	0.164

Effective depth H_R (cm) = a − b·(R_h + Cm). Defaults shown are typical for a BS 152H hydrometer.

REMARKS

Hydrometer calibration: effective depth H_R = 16.3 − 0.164·R_h (cm); bulb volume 67 cm³.

Hydrometer Test · BH-01 / D3 · BS 1377-2: 1990

HYDROMETER CALIBRATION & SAMPLE DATA

SPECIFIC GRAVITY GS	2.65	DRY MASS PER LITRE M (G)	50	MENISCUS CORRECTION CM	0.5
DISPERSING-AGENT CORR. CD	4	CALIBRATION A (CM)	16.3	CALIBRATION B	0.164

Effective depth H_R (cm) = a − b·(R_h + Cm). Defaults shown are typical for a BS 152H hydrometer.

HYDROMETER READINGS (BS 1377-2)

Time (min)	Reading R_h	Temp (°C)	R' = R_h + Cm − Cd	H_R (cm)	D (mm)	% finer
0.5	38	22	34.5	9.99	0.0595	100
1	36	22	32.5	10.31	0.0427	100
2	33	22	29.5	10.81	0.0309	94.8
4	30	22	26.5	11.3	0.0224	85.1
8	27	22	23.5	11.79	0.0161	75.5
15	24	22	20.5	12.28	0.012	65.8
30	21	22	17.5	12.77	0.0087	56.2
60	18	22	14.5	13.27	0.0063	46.6
120	15	22	11.5	13.76	0.0045	36.9
240	12	22	8.5	14.25	0.0032	27.3
1440	8	22	4.5	14.91	0.0014	14.5

REMARKS

50 g of −63 µm fines dispersed in sodium hexametaphosphate; 152H hydrometer.

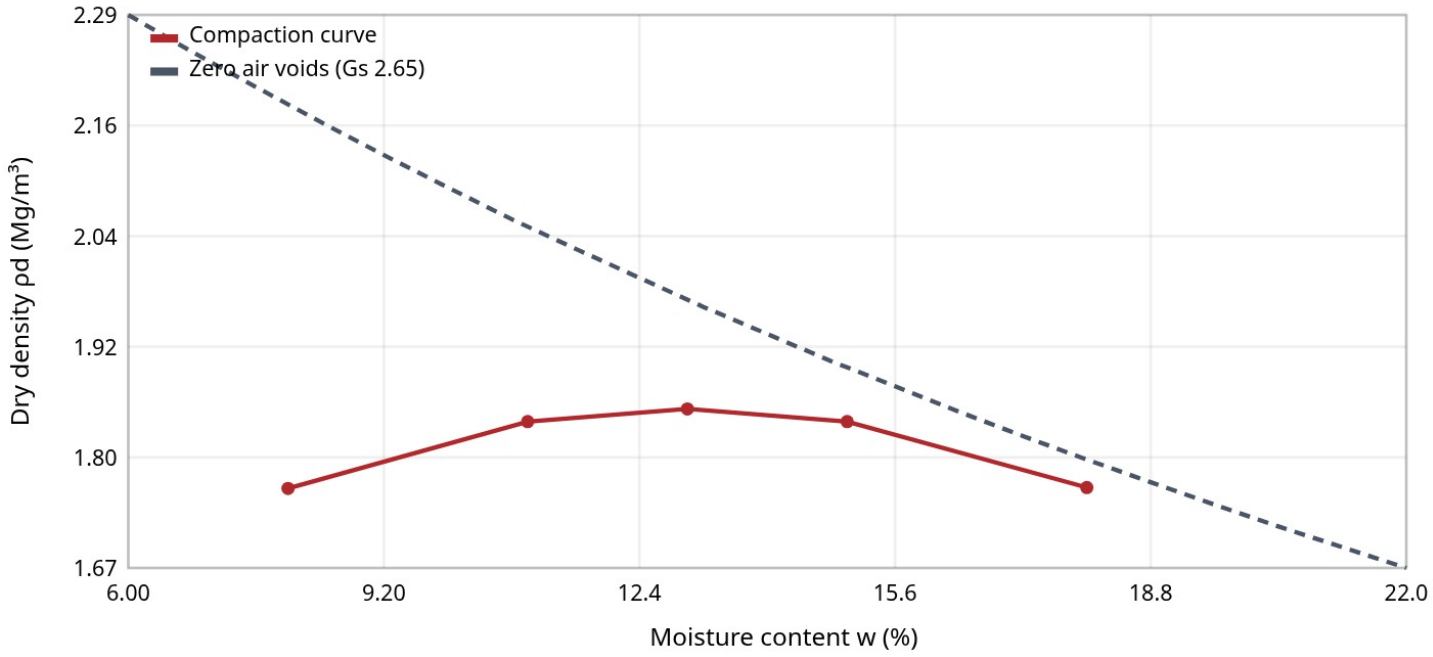
Compaction (Proctor) · TP-01 / B1 · BS 1377-4: 1990

METHOD 2.5 kg rammer (standard) MOULD VOL (CM³) 1000 GS 2.65

COMPACTION POINTS (BS 1377-4:1990)

Pt	Wet soil in mould (g)	Tin wet (g)	Tin dry (g)	Tin (g)	w (%)	ρ (Mg/m³)	ρd (Mg/m³)
1	1903				8	1.903	**1.762**
2	2038				11	2.038	**1.836**
3	2091				13	2.091	**1.85**
4	2111				15	2.111	**1.836**
5	2080				18	2.08	**1.763**

COMPACTION CURVE



RESULT

OPTIMUM MOISTURE CONTENT	MAX DRY DENSITY	METHOD
13 %	**1.85 Mg/m³**	**2.5 kg rammer (standard)**

REMARKS

2.5 kg rammer, 3 layers × 27 blows (BS light). Zero-air-voids line drawn at Gs = 2.65.

CBR · TP-01 / B1 · BS 1377-4: 1990

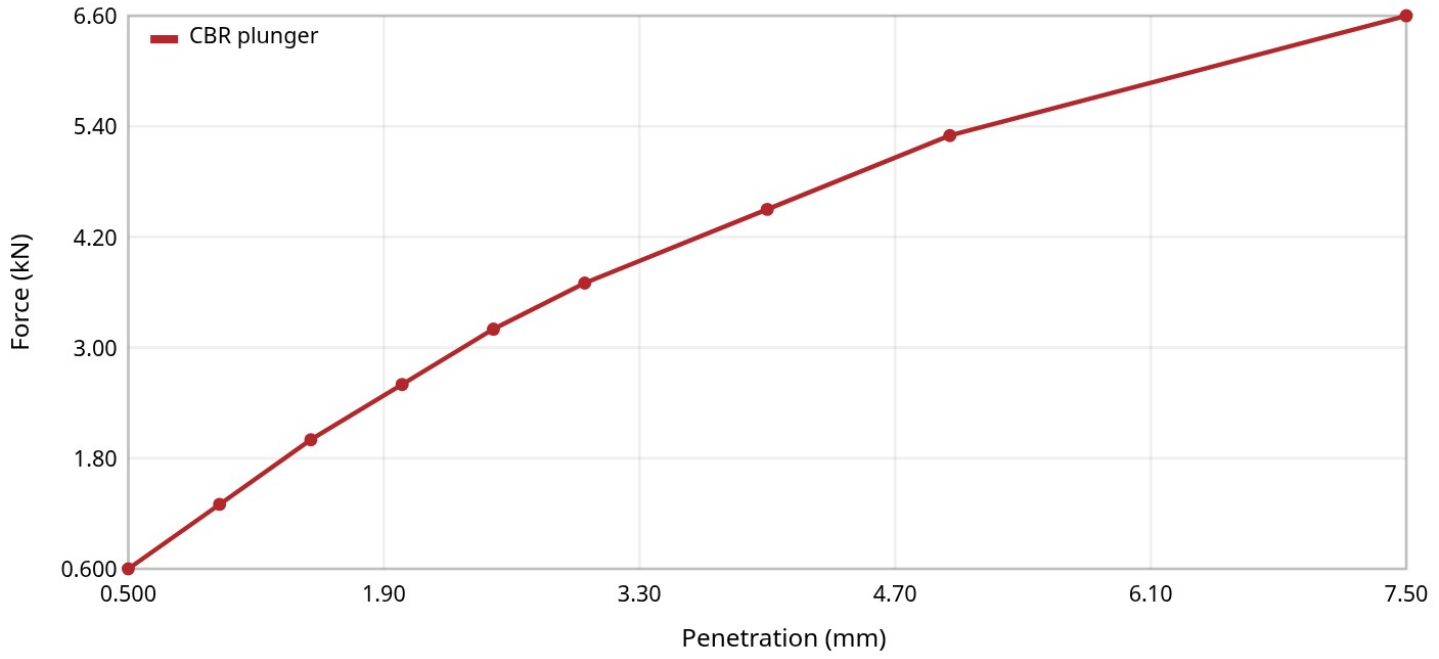
CONDITION Unsoaked

SURCHARGE (KG) 4.5

PENETRATION / FORCE (BS 1377-4:1990 CL. 7)

Penetration (mm)	Force (kN)
0.5	0.6
1	1.3
1.5	2
2	2.6
2.5	3.2
3	3.7
4	4.5
5	5.3
7.5	6.6

LOAD–PENETRATION CURVE



RESULT

FORCE @ 2.5 MM	FORCE @ 5.0 MM	CBR @ 2.5 MM	CBR @ 5.0 MM
3.2 kN	**5.3 kN**	**24.2 %**	**26.5 %**

REPORTED CBR	GOVERNING PENETRATION
26.5 %	**5.0 mm**

CBR = applied force / standard force × 100, with standard forces of 13.2 kN at 2.5 mm and 20 kN at 5.0 mm.

REMARKS

Compacted at OMC to 100 % MDD; plunger rate 1 mm/min; 4.5 kg annular surcharge.

Permeability · BH-02 / U1 · BS 1377-6: 1990

METHOD Falling head L (MM) 100 A (MM^2) 7854 A STANDPIPE (MM^2) 78.5

TEMP (°C) 22

PERMEABILITY — FALLING HEAD (BS 1377-6:1990)

Run	h_1 (mm)	h_2 (mm)	Time (s)	k (m/s)
1	1000	500	420	**1.65e-6**
2	900	450	430	**1.61e-6**
3	800	400	415	**1.67e-6**

RESULT

MEAN K AT TEST TEMP
1.64e-6 m/s

VISCOSITY RATIO RT
0.953

K_{20} (CORRECTED)
1.57e-6 m/s

$k = (a \cdot L)/(A \cdot t) \cdot \ln(h_1/h_2)$; corrected to 20 °C with RT = η_T / η_{20}.

REMARKS

100 mm diameter × 100 mm specimen, de-aired water, saturated by upward flow.

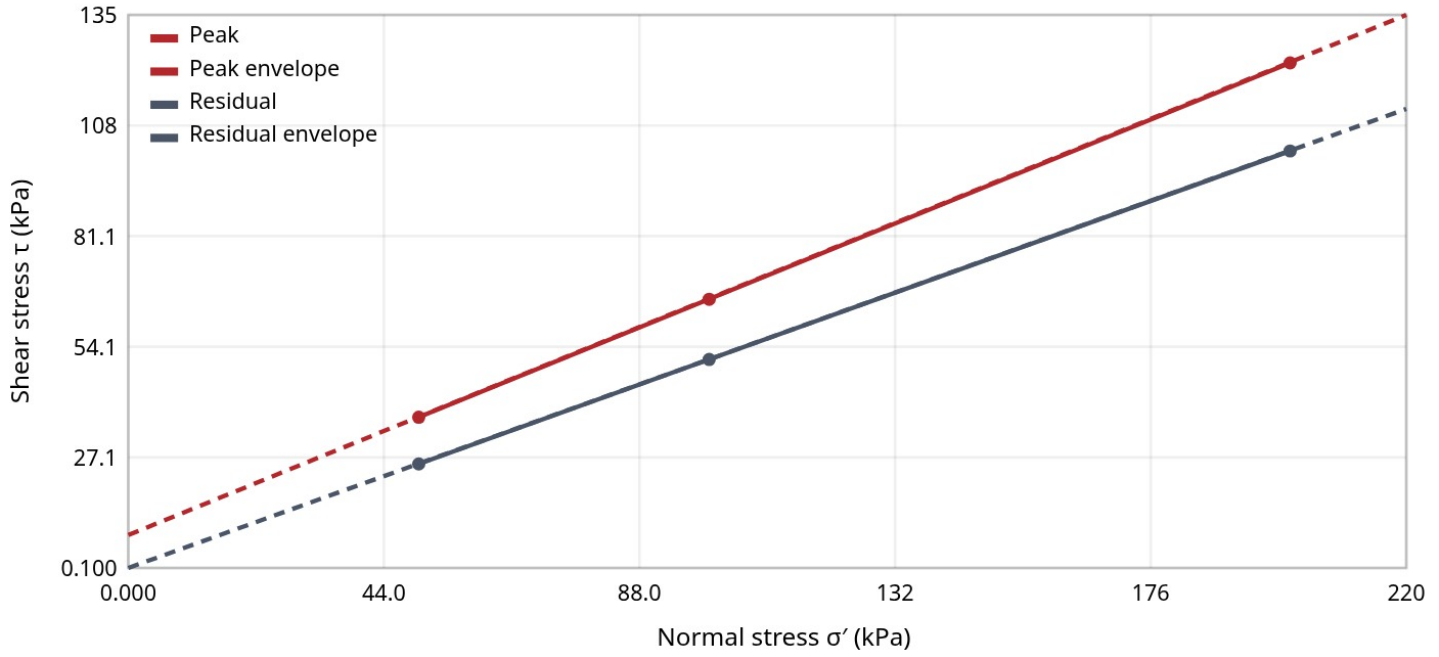
Shear Box · BH-02 / U2 · BS 1377-7: 1990

BOX (MM) 60 **RATE (MM/MIN)** 1 **DRAINAGE** Drained (CD)

SHEAR BOX STAGES (BS 1377-7:1990 CL. 4)

Stage	Normal stress σ′ (kPa)	Peak shear τ (kPa)	Residual τ (kPa)	Disp. (mm)
1	50	36.9	25.5	4.2
2	100	65.7	51	4.6
3	200	123.4	101.9	5.1

FAILURE ENVELOPE



RESULT

PEAK C′	PEAK Φ′	RESIDUAL C′R	RESIDUAL Φ′R
8.1 kPa	**30°**	**0.1 kPa**	**27°**

τ = c′ + σ′·tan ϕ′, fitted by least squares through the stage points.

REMARKS

60 mm square box, consolidated-drained, sheared at 1.0 mm/min to 8 mm displacement.

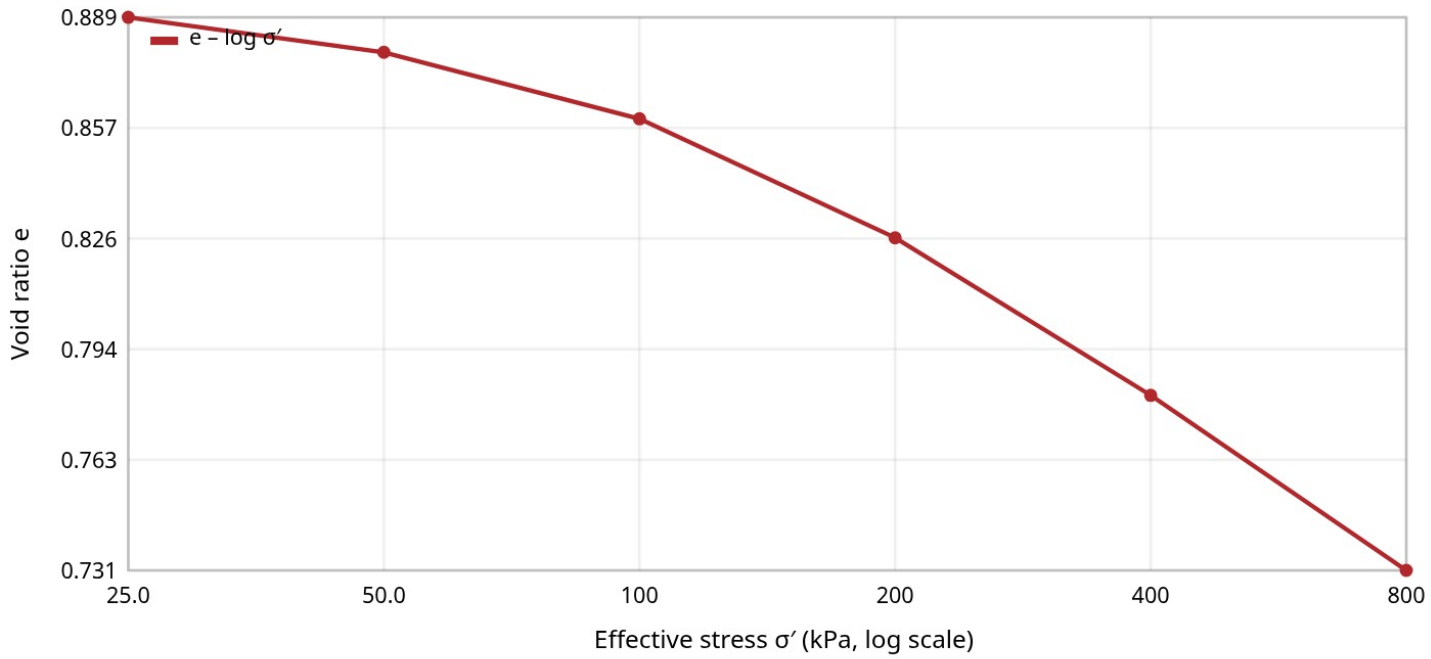
Consolidation · BH-02 / U3 · BS 1377-7: 1990

H_0 (MM) 20 E_0 0.9 DOUBLE DRAINAGE

OEDOMETER STAGES (BS 1377-5/7:1990)

σ′ (kPa)	Settlement (mm)	t_{50} (min)	Unload	Void ratio e	mv (m²/MN)	cv (m²/yr)
25	0.12	2.5		**0.889**	—	4.12
50	0.22	3		**0.879**	0.201	3.39
100	0.42	3.4		**0.86**	0.202	2.95
200	0.78	3.8		**0.826**	0.184	2.56
400	1.25	4.2		**0.781**	0.122	2.22
800	1.78	4.6		**0.731**	0.071	1.92

E – LOG Σ′ CURVE



RESULT

COMPRESSION INDEX CC	SWELLING INDEX CS	PRECONSOLIDATION Σ′P
0.166	—	**130.9 kPa**

$e = e_0 - (\Delta H/H_0)(1+e_0)$; $mv = (\Delta H/H)/\Delta\sigma'$; $cv = 0.197 \cdot H^2 dr/t_{50}$ (Taylor/Casagrande t_{50}).

REMARKS

75 mm diameter × 20 mm specimen, 24 h load increments, double drainage.

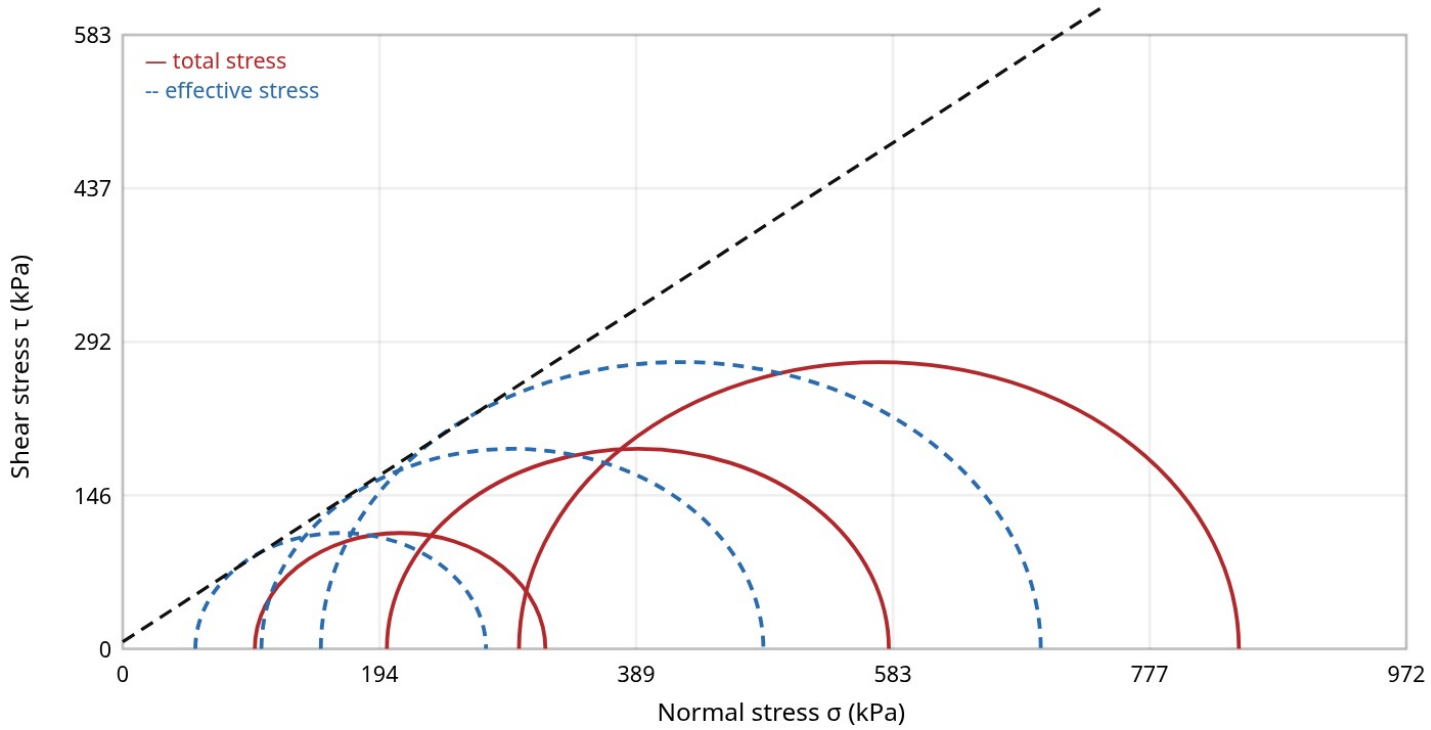
Triaxial · BH-02 / U4 · BS 1377-8: 1990

TEST UU — unconsolidated undrained

SPECIMENS AT FAILURE (BS 1377-7/8:1990)

Spec.	σ_3 (kPa)	Deviator (kPa)	u_f (kPa)	εf (%)	σ_1 (kPa)	σ_1' / σ_3'
1	100	220	45	4.5	**320**	275 / 55
2	200	380	95	5.2	**580**	485 / 105
3	300	545	150	6	**845**	695 / 150

MOHR–COULOMB



RESULT

C (TOTAL)	Φ (TOTAL)	C′	Φ′	MEAN CU
17.5 kPa	**26.6°**	**6.7 kPa**	**39.1°**	**190.8 kPa**

Envelope fitted in s–t space: t = a + s·tanα with sin ϕ = tan α and c = a / cos ϕ. cu = deviator / 2 (UU).

REMARKS

38 mm × 76 mm specimens, B ≥ 0.95, sheared at 0.05 %/min with back-pressure 200 kPa.

FOUNDATION ANALYSES

Shallow Foundations

Analysis	Borehole	Depth (m)	q_ult / Q_ult (kPa | kN)	q_all / Q_all (kPa | kN)	FoS
Pad 2×2 m @ 1.5 m — BH-01	BH-01	1.5	1116.18	390.06	3

Pile Capacity

Analysis	Borehole	Depth (m)	q_ult / Q_ult (kPa | kN)	q_all / Q_all (kPa | kN)	FoS
600 mm bored pile @ 25 m — BH-01	BH-01	25	380.92	152.37	2.5

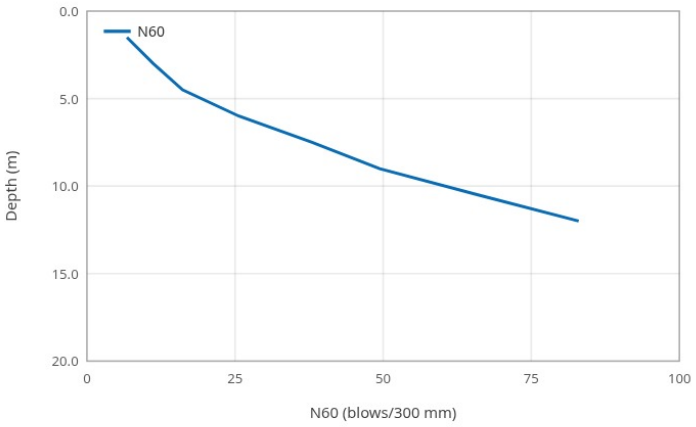
SPT-Based Design Parameters

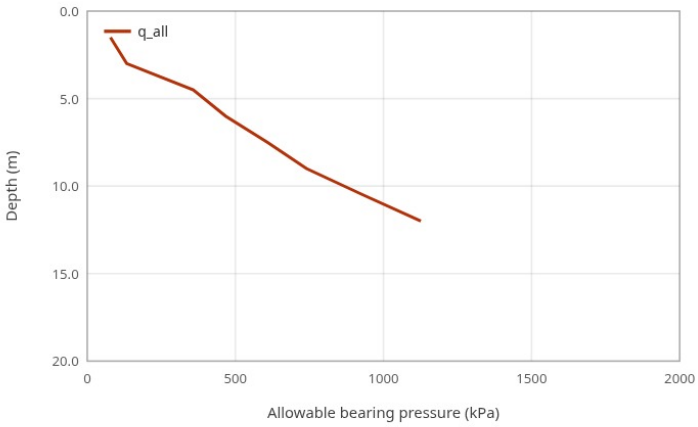
Analysis	Borehole	Depth (m)	q_ult / Q_ult (kPa | kN)	q_all / Q_all (kPa | kN)	FoS
SPT design parameters — BH-01	BH-01	12	10784.68	78.39	3

SPT design parameters — BH-01

Depth (m)	N	N60	(N1)60	USCS	Dr (%)	ϕ' (°)	su (kPa)	q_all (kPa)	Settlement (mm)	Liq. FS
1.5	9	6.8	11.5	CL	—	—	33.8	78.4	3.2	—
3	14	11.2	16	CL	—	—	56	133.3	3.3	—
4.5	19	15.6*	19.7	SC	57	31.6	—	358	70.7	1.82
6	27	20.3*	23.3	SC	62	33	—	467.1	70.7	2.09
7.5	40	26.5*	27.9	SC	68	34.7	—	609	70.7	3.01
9	52	32.2*	31.6	SM	73	36.2	—	740	70.7	13.56
10.5	66	40.5*	37.3	SM	79	38.4	—	930.8	70.7	13.31
12	83	49*	42.7	SM	84	40.5	—	1126.1	70.7	13.15

** Dilatancy (water-table) correction applied: N′60 = 15 + 0.5·(N60 - 15) for saturated fine-grained granular soils (SM, SC, SM-SC, ML) with N60 > 15 below the water table (Terzaghi & Peck 1948).*



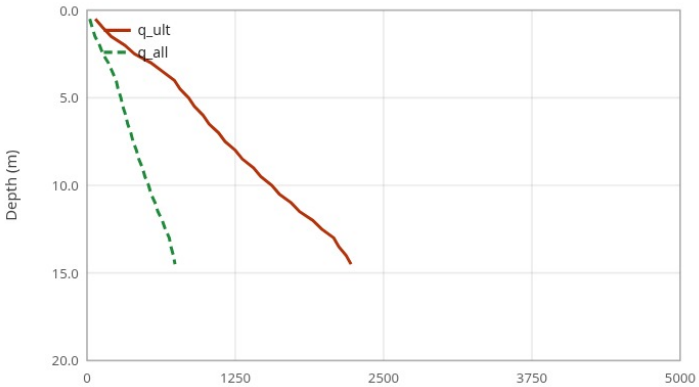


CPT Bearing Capacity

Analysis	Borehole	Depth (m)	q_ult / Q_ult (kPa | kN)	q_all / Q_all (kPa | kN)	FoS
CPT bearing capacity — CPT-01 (piezocone, 20 t)	BH-01	14.5	2225.66	741.89	3

CPT bearing capacity — CPT-01 (piezocone, 20 t)

Depth (m)	qc (MPa)	q_ult (kPa)	q_all (kPa)	su (kPa)
0.5	—	70	23.3	—
1	—	133.6	44.5	—
1.5	—	203	67.7	—
2	—	318	106	—
2.5	—	401.8	133.9	—
3	—	538.3	179.4	—
3.5	—	636.5	212.2	—
4	—	736.1	245.4	—
4.5	—	784.5	261.5	—
5	—	857.1	285.7	—
5.5	—	905.5	301.8	—
6	—	978.5	326.2	—
6.5	—	1029.2	343.1	—
7	—	1108.7	369.6	—
7.5	—	1164	388	—
8	—	1250.4	416.8	—
8.5	—	1310.3	436.8	—
9	—	1403.1	467.7	—
9.5	—	1465.3	488.4	—
10	—	1558.2	519.4	—
10.5	—	1621.6	540.5	—
11	—	1721.8	573.9	—
11.5	—	1792.1	597.4	—
12	—	1902.6	634.2	—
12.5	—	1979.8	659.9	—
13	—	2080.5	693.5	—
13.5	—	2122	707.3	—
14	—	2184.2	728.1	—
14.5	—	2225.7	741.9	—



ENGINEERING GEOPHYSICS

VES-01 — 1D Vertical Electrical Sounding (VES)

Array	Schlumberger
Readings	0

Enter at least two readings to draw the sounding curve.

VES-02 — 1D Vertical Electrical Sounding (VES)

Array	Schlumberger
Readings	0

Enter at least two readings to draw the sounding curve.

GPR-01 — Ground Penetrating Radar (GPR)

REPORT AUTHORISATION

Role	Name	Signature	Date
Prepared by	—		10/13/2026
Checked by	—		10/13/2026
Approved by	—		10/13/2026