STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
A635 Barnsley Bus RapidTransit Route		**Barnsley Metropolitan Borough council**		**WS18**
Contract Ref:	Start: **21.08.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
765865	End: **21.08.24**	**46.77**	**E:437304.5 N:405618.9**	**2** of **3**

Method Used:	**Tracked window sampling**	Plant Used:	**Archway Competitor**	Drilled By:	**Sam Keenan**	Logged By:	**JMyles**	Checked By:	AG

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log WINDOW SAMPLE LOG - A4P | 765865_A635_BARNSLEY_BUS_RAPIDTRANSIT_ROUTE.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
A635 Barnsley Bus RapidTransit Route		**Barnsley Metropolitan Borough council**		**WS18**
Contract Ref:	Start: **21.08.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
765865	End: **21.08.24**	**46.77**	**E:437304.5 N:405618.9**	**3** of **3**

Method Used:	**Tracked window sampling**	Plant Used:	**Archway Competitor**	Drilled By:	**Sam Keenan**	Logged By:	**JMyles**	Checked By:	AG

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STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
A635 Barnsley Bus RapidTransit Route	**Barnsley Metropolitan Borough council**	**WS18A**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
765865	**22.08.24** End: **22.08.24**	**47.00**	**E:437307.3 N:405618.6**	**1** of **3**

Progress	Samples / Tests				Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results						
							MADE GROUND: TARMAC.	46.90	0.10	
	0.20	101	ES				(MADE GROUND) MADE GROUND: Off white sandy silty gravel. Sand is fine. Gravel is angular to subangular fine to coarse stone aggregate. (type 1)			
	0.50	1	D				(MADE GROUND)		(0.90)	
	1.00	2	B					46.00	1.00	
	1.00	3	D				Window sample hole terminated at 1.00m depth due to service strike. (potential waste water drain)			

Drilling Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

1. Position cleared with GPR and CAT and Genny.
2. Hand dug inspection pit to 1.00m depth.
3. Window Sample terminated at 1.00m depth due to services encountered.
4. No groundwater encountered.
5. Backfilled on completion.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Hand held window sampling	**Hand held window sampler**	**Sam Keenan**	**JMyles**	AG

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STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
A635 Barnsley Bus RapidTransit Route		**Barnsley Metropolitan Borough council**		**WS18A**
Contract Ref:	Start: **22.08.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
765865	End: **22.08.24**	**47.00**	**E:437307.3 N:405618.6**	**2** of **3**

Method Used:	**Hand held window sampling**	Plant Used:	**Hand held window sampler**	Drilled By:	**Sam Keenan**	Logged By:	**JMyles**	Checked By:	AG

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STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
A635 Barnsley Bus RapidTransit Route		Barnsley Metropolitan Borough council		WS18A
Contract Ref:	Start: 22.08.24	Ground Level:	National Grid Co-ordinate:	Sheet:
765865	End: 22.08.24	47.00	E:437307.3 N:405618.6	3 of 3

Method Used:	Hand held window sampling	Plant Used:	Hand held window sampler	Drilled By:	Sam Keenan	Logged By:	JMyles	Checked By:	AG

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STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
A635 Barnsley Bus RapidTransit Route	**Barnsley Metropolitan Borough council**	**WS19**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
765865	**13.08.24** End: **13.08.24**	**46.82**	**E:437294.0 N:405643.1**	**1** of **6**

Progress	Samples / Tests				Water	Backfill & Instrumentation	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results						
	0.10-0.20	1	D				MADE GROUND: Friable light brown slightly gravelly CLAY. Gravel is angular to subangular fine to coarse of mudstone and siltstone. (MADE GROUND)		(0.30)	
	0.10	101	ES	1xT+1xJ+1xV						
	0.10-0.30	2	B					46.52	0.30	
	0.40	102	ES	1xT+1xJ+1xV			MADE GROUND: Stiff friable light brown mottled grey slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is angular to subangular fine to medium of mudstone, sandstone and siltstone. (MADE GROUND)			
	0.40-0.50	3	D						(1.30)	
	0.50-1.00	4	B							
	1.20-1.65	1	SPT	N=7						
	1.20-1.65	6	DSPT							
1.20 - 2.00 (85mm dia) 100% rec	1.20-1.60	7	B					45.22	1.60	
	1.60-1.80	103	ES	1xT+1xJ+1xV			Stiff light brown and grey mottled slightly sandy slightly gravelly CLAY. Sands is fine to medium. Gravel are angular to subangular fine to medium of mudstone.			
	1.80-1.90	8	D							
	2.00-2.45	2	SPT	N=7						
	2.00-2.45	10	DSPT						(1.10)	
2.00 - 3.00 (75mm dia) 80% rec	2.20-2.70	11	B					44.12	2.70	
	2.75-2.95	104	ES	1xT+1xJ+1xV			Stiff grey slightly gravelly CLAY. Gravel is angular to subangular fine to medium of coal. 2.70. To 2.80 : strong organic odour		(0.40)	
	3.00-3.45	3	SPT	N=15				43.72	3.10	
	3.00-3.45	13	DSPT							
3.00 - 4.00 (65mm dia) 100% rec	3.10-3.65	14	B				Stiff to very stiff brown mottled grey slightly sandy slightly gravelly CLAY. Sand is fine to medium. Gravel is angular to subangular fine to medium of mudstone.		(0.55)	
	3.65-4.00	15	B					43.17	3.65	
	4.00-4.45	4	SPT	N=34			Extremely weak brown and grey MUDSTONE. (PENNINE MIDDLE COAL MEASURES FORMATION)			
	4.00-4.45	17	DSPT							
4.00 - 5.00 (65mm dia) 100% rec	4.00-5.00	18	B							

Drilling Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

1. Position cleared with GPR and CAT and Genny.
2. Hand dug inspection pit to 1.20m depth.
3. Window Sample terminated at 5.45m depth,
4. No groundwater encountered.
5. Backfilled on completion.
6. SPT hammer 110.49-2024 (E_r = 81.00%) used.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Tracked window sampling	**Archway Competitor**	**Sam Keenan**	**KAdedotun**	AG

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STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
A635 Barnsley Bus RapidTransit Route	**Barnsley Metropolitan Borough council**	**WS19**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
765865	**13.08.24** End: **13.08.24**	**46.82**	**E:437294.0 N:405643.1**	**2** of **6**

Progress	Samples / Tests				Water	Backfill & Instru-mentation	Description of Strata	Reduced Level	Depth (Thick ness)	Material Graphic Legend
Window Run	Depth	No	Type	Results						
4.00 - 5.00 (65mm dia) 100% rec	5.00-5.45 5.00-5.45	5 20	SPT DSPT	N=28			Extremely weak brown and grey MUDSTONE. (PENNINE MIDDLE COAL MEASURES FORMATION) *(stratum copied from 3.65m from previous* sheet)		(1.80)	
							Window Sample terminated at 5.45m depth. (Target depth).	41.37	5.45	

Drilling Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Tracked window sampling	**Archway Competitor**	**Sam Keenan**	**KAdedotun**	AG

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STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
A635 Barnsley Bus RapidTransit Route		**Barnsley Metropolitan Borough council**		**WS19**
Contract Ref:	Start: **13.08.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
765865	End: **13.08.24**	**46.82**	**E:437294.0 N:405643.1**	**3** of **6**

Method Used:	**Inspection pit + Tracked window sampling**	Plant Used:	**Archway Competitor**	Drilled By:	**Sam Keenan**	Logged By:	**KAdedotun**	Checked By:	AG

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STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
A635 Barnsley Bus RapidTransit Route		**Barnsley Metropolitan Borough council**		**WS19**
Contract Ref:	Start: **13.08.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
765865	End: **13.08.24**	**46.82**	**E:437294.0 N:405643.1**	**4** of **6**

Method Used:	**Inspection pit + Tracked window sampling**	Plant Used:	**Archway Competitor**	Drilled By:	**Sam Keenan**	Logged By:	**KAdedotun**	Checked By:	AG

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log WINDOW SAMPLE LOG - A4P | 765865_A635_BARNSLEY_BUS_RAPIDTRANSIT_ROUTE.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
A635 Barnsley Bus RapidTransit Route		**Barnsley Metropolitan Borough council**		**WS19**
Contract Ref:	Start: **13.08.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
765865	End: **13.08.24**	**46.82**	**E:437294.0 N:405643.1**	**5** of **6**

Method Used:	**Inspection pit + Tracked window sampling**	Plant Used:	**Archway Competitor**	Drilled By:	**Sam Keenan**	Logged By:	**KAdedotun**	Checked By:	AG

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STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
A635 Barnsley Bus RapidTransit Route		**Barnsley Metropolitan Borough council**		**WS19**
Contract Ref:	Start: **13.08.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
765865	End: **13.08.24**	**46.82**	**E:437294.0 N:405643.1**	**6** of **6**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log WINDOW SAMPLE LOG - A4P | 765865_A635_BARNSLEY_BUS_RAPIDTRANSIT_ROUTE.GPJ - v10_01.
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Method Used:	**Inspection pit + Tracked window sampling**	Plant Used:	**Archway Competitor**	Drilled By:	**Sam Keenan**	Logged By:	**KAdedotun**	Checked By:	AG

STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
A635 Barnsley Bus RapidTransit Route	**Barnsley Metropolitan Borough council**	**WS20**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
765865	**07.08.24** End: **07.08.24**	**44.51**	**E:437261.9 N:405652.0**	**1** of **3**

Progress	Samples / Tests				Water	Backfill & Instru-mentation	Description of Strata	Reduced Level	Depth (Thick ness)	Material Graphic Legend
Window Run	Depth	No	Type	Results						
	0.00-0.10	1	B				MADE GROUND: TARMACADAM (MADE GROUND)	44.41	0.10	
	0.20	101	ES	1xT+1xJ+1xV			MADE GROUND: Dark brown slightly gravelly slightly fine SAND. Gravel is angular to subangular fine to coarse of limestone, bricks and concrete fragments. (MADE GROUND)	43.91	(0.50) 0.60	
	0.20-0.30	2	D							
	0.20-0.50	3	B							
	0.70-0.80	4	D				Very stiff friable brown slightly sandy CLAY. Sand is fine to medium.		(0.86)	
	0.70-1.00	5	B							
	1.20-1.65	6	SPT	N=16						
	1.20	102	ES	1xT+1xJ+1xV				43.05	1.46	
1.20 - 2.00 (98mm dia) 85% rec	1.20-1.65	7	DSPT							
	1.50	103	ES	1xT+1xJ+1xV			Extremely weak grey MUDSTONE.			
	1.80-2.00	8	D						(0.77)	
	2.00-2.23	9	SPT	8,16/50 for 75mm						
	2.00-2.20	10	DSPT					42.28	2.23	
							Location terminated at 2.23m on SPT refusal.			

Drilling Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
07/08/24	22:27	2.20	-		-

General Remarks

1. Position cleared with GPR and CAT and Genny.
2. Hand dug inspection pit to 1.20m depth.
3. Window Sample terminated at 2.23m depth on SPT refusal.
4. No groundwater encountered.
5. Backfilled on completion.
6. SPT hammer DART384-2024 (E_r = 68.00%) used.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Tracked window sampling	**Archway Competitor**	**Ben Pine**	**KAdedotun**	AG

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STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
A635 Barnsley Bus RapidTransit Route		**Barnsley Metropolitan Borough council**		**WS20**
Contract Ref:	Start: **07.08.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
765865	End: **07.08.24**	**44.51**	**E:437261.9 N:405652.0**	**2** of **3**

Method Used:	**Inspection pit + Tracked window sampling**	Plant Used:	**Archway Competitor**	Drilled By:	**Ben Pine**	Logged By:	**KAdedotun**	Checked By:	AG

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log WINDOW SAMPLE LOG - A4P | 765865_A635_BARNSLEY_BUS_RAPIDTRANSIT_ROUTE.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
A635 Barnsley Bus RapidTransit Route		**Barnsley Metropolitan Borough council**		**WS20**
Contract Ref:	Start: **07.08.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
765865	End: **07.08.24**	**44.51**	**E:437261.9 N:405652.0**	**3** of **3**

Method Used:	**Inspection pit + Tracked window sampling**	Plant Used:	**Archway Competitor**	Drilled By:	**Ben Pine**	Logged By:	**KAdedotun**	Checked By:	AG

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log WINDOW SAMPLE LOG - A4P | 765865_A635_BARNSLEY_BUS_RAPIDTRANSIT_ROUTE.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
A635 Barnsley Bus RapidTransit Route	**Barnsley Metropolitan Borough council**	**WS21**

Contract Ref:	Start: **16.08.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
765865	End: **16.08.24**	**47.69**	**E:437252.7 N:405624.6**	**1** of **3**

Progress	Samples / Tests				Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results						
	0.10-0.20 0.10-0.35 0.15	1 2 101	D B ES	1xT+1xJ+1xV			MADE GROUND: TARMACADAM (MADE GROUND)	47.59	0.10	
							MADE GROUND: Dark brown very gravelly fine to coarse SAND. Gravel is angular to subangular fine to coarse of tarmac and concrete fragments. (MADE GROUND)	47.34	0.35	
							Window Sample terminated at 0.35m depth on concrete.			

Drilling Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
16/08/24	14:07		-		-

General Remarks

1. Position scanned with CAT and Genny prior to drilling.
2. Hand dug inspection pit to 0.35m depth.
3. Location terminated at 0.35m due to concrete.
4. No groundwater encountered.
5. Backfilled on completion.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Tracked window sampling	**Archway Competitor**	**Sam Keenan**	**KAdedotun**	AG

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STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
A635 Barnsley Bus RapidTransit Route		**Barnsley Metropolitan Borough council**		**WS21**
Contract Ref:	Start: **16.08.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
765865	End: **16.08.24**	**47.69**	**E:437252.7 N:405624.6**	**2** of **3**

Method Used:	**Inspection pit + Tracked window sampling**	Plant Used:	**Archway Competitor**	Drilled By:	**Sam Keenan**	Logged By:	**KAdedotun**	Checked By:	AG

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log WINDOW SAMPLE LOG - A4P | 765865_A635_BARNSLEY_BUS_RAPIDTRANSIT_ROUTE.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
A635 Barnsley Bus RapidTransit Route		**Barnsley Metropolitan Borough council**		**WS21**
Contract Ref:	Start: **16.08.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
765865	End: **16.08.24**	**47.69**	**E:437252.7 N:405624.6**	**3** of **3**

Method Used:	**Inspection pit + Tracked window sampling**	Plant Used:	**Archway Competitor**	Drilled By:	**Sam Keenan**	Logged By:	**KAdedotun**	Checked By:	AG

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log WINDOW SAMPLE LOG - A4P | 765865_A635_BARNSLEY_BUS_RAPIDTRANSIT_ROUTE.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
A635 Barnsley Bus RapidTransit Route	**Barnsley Metropolitan Borough council**	**WS22**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
765865	**15.08.24** End: **15.08.24**	**47.99**	**E:437238.5 N:405576.4**	**1** of **4**

Progress	Samples / Tests				Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results						
	0.10-0.20	1	D				MADE GROUND: TARMACADAM. (MADE GROUND)	47.94	0.05	
	0.10	101	ES	1xT+1xJ+1xV			MADE GROUND: White sandy angular to subrounded fine to coarse GRAVEL of LIMESTONE. (MADE GROUND)	47.69	0.30	
	0.10-0.30	2	B						(0.40)	
	0.40	102	ES	1xT+1xJ+1xV			MADE-GROUND: Black gravelly fine to coarse SAND. Gravel is angular to subangular fine to coarse of limestone with tarmac and bricks fragments. (MADE GROUND)	47.29	0.70	
	0.40-0.50	3	D						(0.50)	
	0.40-0.70	4	B				Firm greenish grey CLAY.	46.79	1.20	
	0.80	103	ES	1xT+1xJ+1xV						
	0.80-0.90	5	D							
1.20 - 1.90 (85mm dia) 100% rec	0.80-1.10	6	B							
	1.20-1.65	7	SPT	N=30			Extremely weak light brown MUDSTONE.		(1.00)	
	1.20-1.65	8	DSPT							
	1.20-1.90	9	B							
	1.90-2.16	10	SPT	10,12/27,23 for 30mm				45.79	2.20	
	1.90-2.13	11	DSPT				Window Sample terminated at 2.20m depth of refusal.			

Drilling Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
15/08/24	15:42	2.13	-		-

General Remarks

1. Position scanned with CAT and Genny prior to drilling.
2. Hand dug inspection pit to 1.20m depth.
3. Location terminated at 2.20m on refusal.
4. No groundwater encountered.
5. 50mm standpipe installed on completion.
6. SPT hammer 110.49-2024 (E_r = 81.00%) used.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Tracked window sampling	**Archway Competitor**	**Sam Keenan**	**KAdedotun**	AG

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STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
A635 Barnsley Bus RapidTransit Route		**Barnsley Metropolitan Borough council**		**WS22**
Contract Ref:	Start: **15.08.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
765865	End: **15.08.24**	**47.99**	**E:437238.5 N:405576.4**	**2** of **4**

Method Used:	**Inspection pit + Tracked window sampling**	Plant Used:	**Archway Competitor**	Drilled By:	**Sam Keenan**	Logged By:	**KAdedotun**	Checked By:	AG

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log WINDOW SAMPLE LOG - A4P | 765865_A635_BARNSLEY_BUS_RAPIDTRANSIT_ROUTE.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
A635 Barnsley Bus RapidTransit Route		**Barnsley Metropolitan Borough council**		**WS22**
Contract Ref:	Start: **15.08.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
765865	End: **15.08.24**	**47.99**	**E:437238.5 N:405576.4**	**3** of **4**

Method Used:	**Inspection pit + Tracked window sampling**	Plant Used:	**Archway Competitor**	Drilled By:	**Sam Keenan**	Logged By:	**KAdedotun**	Checked By:	AG

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log WINDOW SAMPLE LOG - A4P | 765865_A635_BARNSLEY_BUS_RAPIDTRANSIT_ROUTE.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
A635 Barnsley Bus RapidTransit Route		**Barnsley Metropolitan Borough council**		**WS22**
Contract Ref:	Start: **15.08.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
765865	End: **15.08.24**	**47.99**	**E:437238.5 N:405576.4**	**4** of **4**

Method Used:	**Inspection pit + Tracked window sampling**	Plant Used:	**Archway Competitor**	Drilled By:	**Sam Keenan**	Logged By:	**KAdedotun**	Checked By:	AG

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log WINDOW SAMPLE LOG - A4P | 765865_A635_BARNSLEY_BUS_RAPIDTRANSIT_ROUTE.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
A635 Barnsley Bus RapidTransit Route	**Barnsley Metropolitan Borough council**	**WS23**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
765865	**12.08.24** End: **12.08.24**	**47.47**	**E:437262.1 N:405561.0**	**1** of **3**

Progress	Samples / Tests				Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results						
	0.10	1	D				MADE GROUND: Brown friable slightly sandy slightly gravelly CLAY. Sand is fine. Gravel is angular to subangular fine to coarse of tarmac limestone and concrete.			
	0.10	101	ES	1xT+1xJ+1xV						
	0.10-0.40	2	B					46.97	(0.50) 0.50	
	0.60	102	ES	1xT+1xJ+1xV			MADE GROUND- Dark brown slightly gravelly silty fine and medium SAND. Gravel is angular to subangular fine to coarse of sandstone, tarmac and bricks.			
	0.60-0.70	3	D							
	0.60-0.90	4	B					46.57	(0.40) 0.90	
	1.00	103	ES	1xT+1xJ+1xV			MADE GROUND: Very soft white and dark brown sandy WHITE MATERIAL. Sand is fine to medium.			
	1.00-1.20	5	B					46.27	(0.30) 1.20	
	1.20-1.65	6	SPT	N=7			Stiff light brown mottled grey CLAY.			
	1.20-1.65	7	DSPT							
	1.20-1.30	8	D							
	1.30-1.40	104	ES	1xT+1xJ+1xV				45.97	(0.30) 1.50	
1.20 - 2.00 (85mm dia) 100% rec	1.50-1.90	9	B				Extremely weak light brown and grey MUDSTONE.			
	2.00-2.45	10	SPT	N=29						
	2.00-2.45	11	DSPT							
	2.00-2.60	12	B						(1.40)	
2.00 - 2.60 (65mm dia) 100% rec										
	2.60-2.90	13	SPT	13,60/15,30 for 75mm						
	2.60-2.85	14	DSPT					44.57	2.90	
							Window sample terminated at 2.90m depth on SPT refusal.			

Drilling Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
12/08/24	08:51	2.85	-		-

General Remarks

1. Position scanned with CAT and Genny prior to drilling.
2. Hand dug inspection pit to 1.20m depth.
3. Location terminated at 2.90m due to refusal.
4. No groundwater encountered.
5. Backfilled on completion.
6. SPT hammer 110.49-2024 (E_r = 81.00%) used.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Tracked window sampling	**Archway Competitor**	**Sam Keenan**	**KAdedotun**	AG

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STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
A635 Barnsley Bus RapidTransit Route		**Barnsley Metropolitan Borough council**		**WS23**
Contract Ref:	Start: **12.08.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
765865	End: **12.08.24**	**47.47**	**E:437262.1 N:405561.0**	**2** of **3**

Method Used:	**Inspection pit + Tracked window sampling**	Plant Used:	**Archway Competitor**	Drilled By:	**Sam Keenan**	Logged By:	**KAdedotun**	Checked By:	AG

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log WINDOW SAMPLE LOG - A4P | 765865_A635_BARNSLEY_BUS_RAPIDTRANSIT_ROUTE.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
A635 Barnsley Bus RapidTransit Route		**Barnsley Metropolitan Borough council**		**WS23**
Contract Ref:	Start: **12.08.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
765865	End: **12.08.24**	**47.47**	**E:437262.1 N:405561.0**	**3** of **3**

Method Used:	**Inspection pit + Tracked window sampling**	Plant Used:	**Archway Competitor**	Drilled By:	**Sam Keenan**	Logged By:	**KAdedotun**	Checked By:	AG

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log WINDOW SAMPLE LOG - A4P | 765865_A635_BARNSLEY_BUS_RAPIDTRANSIT_ROUTE.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
A635 Barnsley Bus RapidTransit Route	**Barnsley Metropolitan Borough council**	**WS24**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
765865	**12.08.24** End: **12.08.24**	**49.13**	**E:437221.2 N:405549.3**	**1** of **3**

Progress	Samples / Tests				Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results						
	0.10	1	D				MADE GROUND: Brown friable slightly sandy slightly gravelly CLAY. Sand is fine. Gravel is angular to subangular fine to coarse of sandstone limestone and concrete fragments. (MADE GROUND)		(0.30)	
	0.10	101	ES	1xT+1xJ+1xV						
	0.10-0.30	2	B					48.83	0.30	
	0.40	102	ES	1xT			Stiff light brown mottled grey CLAY.			
	0.40-0.50	3	D							
	0.50-0.90	4	B						(0.90)	
								47.93	1.20	
	1.20-1.43	1	SPT	19,6/17,25,8 for 0mm			Extremely weak light brown MUDSTONE.		(0.30)	
	1.20-1.50	6	DSPT					47.63	1.50	
							Window Sample terminated at 1.50m depth on SPT refusal.			

Drilling Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

1. Position scanned with CAT and Genny prior to drilling.
2. Hand dug inspection pit to 1.20m depth.
3. Location terminated at 1.50m due to refusal.
4. No groundwater encountered.
5. Backfilled on completion.
6. SPT hammer 110.49-2024 (E_r = 81.00%) used.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Tracked window sampling	**Archway Competitor**	**Sam Keenan**	**KAdedotun**	AG

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log WINDOW SAMPLE LOG - A4P | 765865_A635_BARNSLEY_BUS_RAPIDTRANSIT_ROUTE.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
A635 Barnsley Bus RapidTransit Route		**Barnsley Metropolitan Borough council**		**WS24**
Contract Ref:	Start: **12.08.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
765865	End: **12.08.24**	**49.13**	**E:437221.2 N:405549.3**	**2** of **3**

Method Used:	**Inspection pit + Tracked window sampling**	Plant Used:	**Archway Competitor**	Drilled By:	**Sam Keenan**	Logged By:	**KAdedotun**	Checked By:	AG

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log WINDOW SAMPLE LOG - A4P | 765865_A635_BARNSLEY_BUS_RAPIDTRANSIT_ROUTE.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
A635 Barnsley Bus RapidTransit Route		**Barnsley Metropolitan Borough council**		**WS24**
Contract Ref:	Start: **12.08.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
765865	End: **12.08.24**	**49.13**	**E:437221.2 N:405549.3**	**3** of **3**

Method Used:	**Inspection pit + Tracked window sampling**	Plant Used:	**Archway Competitor**	Drilled By:	**Sam Keenan**	Logged By:	**KAdedotun**	Checked By:	AG

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log WINDOW SAMPLE LOG - A4P | 765865_A635_BARNSLEY_BUS_RAPIDTRANSIT_ROUTE.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
A635 Barnsley Bus RapidTransit Route	**Barnsley Metropolitan Borough council**	**WS26**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
765865	**07.08.24** End: **07.08.24**	**48.23**	**E:437242.5 N:405503.2**	**1** of **3**

Progress	Samples / Tests				Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results						
	0.00-0.20	1	B				MADE-GROUND: Brown gravelly fine to medium SAND. Gravel is angular to subangular fine to coarse of limestone and concrete. (MADE GROUND)	47.98	0.25	
	0.10	101	ES	1xT+1xJ+1xV						
	0.10-0.20	2	D							
	0.30-0.40	3	D				MADE-GROUND: Light brown sandy angular to subangular fine to coarse GRAVEL of limestone. Sand is fine to medium. (MADE GROUND)		(1.30)	
	0.30-0.70	4	B							
	1.20-1.55	1	SPT	5,3/3,3,44 for 50mm				46.68	1.55	
	1.20-1.55	6	DSPT				Window Sample terminated at 1.55m on SPT refusal.			

Drilling Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
07/08/24	23:25	1.55	-		-

General Remarks

1. Position scanned with CAT and Genny prior to drilling.
2. Hand dug inspection pit to 1.20m depth.
3. Location terminated at 1.55m due to refusal.
4. No groundwater encountered.
5. Backfilled on completion.
6. SPT hammer DART384-2024 (E_r = 68.00%) used.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Tracked window sampling	**Archway Competitor**	**Ben Pine**	**KAdedotun**	AG

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STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
A635 Barnsley Bus RapidTransit Route		**Barnsley Metropolitan Borough council**		**WS26**
Contract Ref:	Start: **07.08.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
765865	End: **07.08.24**	**48.23**	**E:437242.5 N:405503.2**	**2** of **3**

Method Used:	**Inspection pit + Tracked window sampling**	Plant Used:	**Archway Competitor**	Drilled By:	**Ben Pine**	Logged By:	**KAdedotun**	Checked By:	AG

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STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
A635 Barnsley Bus RapidTransit Route		**Barnsley Metropolitan Borough council**		**WS26**
Contract Ref:	Start: **07.08.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
765865	End: **07.08.24**	**48.23**	**E:437242.5 N:405503.2**	**3** of **3**

Method Used:	**Inspection pit + Tracked window sampling**	Plant Used:	**Archway Competitor**	Drilled By:	**Ben Pine**	Logged By:	**KAdedotun**	Checked By:	AG

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STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
A635 Barnsley Bus RapidTransit Route	**Barnsley Metropolitan Borough council**	**WS27**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
765865	**07.08.24** End: **07.08.24**	**49.22**	**E:437250.7 N:405485.6**	**1** of **3**

Progress	Samples / Tests				Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results						
	0.10	1	D				MADE GROUND: Brown friable sandy slightly gravelly CLAY. Sand is fine to medium. Gravel is angular to subangular fine to coarse of bricks, limestone and concrete fragments. (MADE GROUND)		(1.10)	
	0.10	101	ES	1xT+1xJ+1xV						
	0.10-0.40	2	B					48.12	1.10	
	1.10-1.20	3	D				MADE GROUND: Firm brown slightly sandy slightly gravelly CLAY. Sands are fine to coarse. Gravel is angular to subangular fine to coarse of tarmac, bricks, dolomite and slag. (MADE GROUND)		(0.83)	
	1.15	102	ES	1xT+1xJ+1xV						
	1.20-1.65	4	SPT	N=40						
	1.20-1.40	103	ES	1xT+1xJ+1xV						
1.20 - 1.70 (85mm dia) 65% rec	1.20-1.65	5	DSPT							
	1.40-1.70	6	B							
	1.70-1.93	7	SPT	25/10 for 75mm				47.29	1.93	
	1.70-1.79	8	D							
							Window Sample terminated at 1.93m on SPT refusal.			

Drilling Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
07/08/24	00:55	1.79	-		-

General Remarks

1. Position scanned with CAT and Genny prior to drilling.
2. Hand dug inspection pit to 1.20m depth.
3. Location terminated at 1.93m on refusal.
4. No groundwater encountered.
5. Backfilled on completion.
6. SPT hammer DART384-2024 (E_r = 68.00%) used.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Tracked window sampling	**Archway Competitor**	**Ben Pine**	**KAdedotun**	AG

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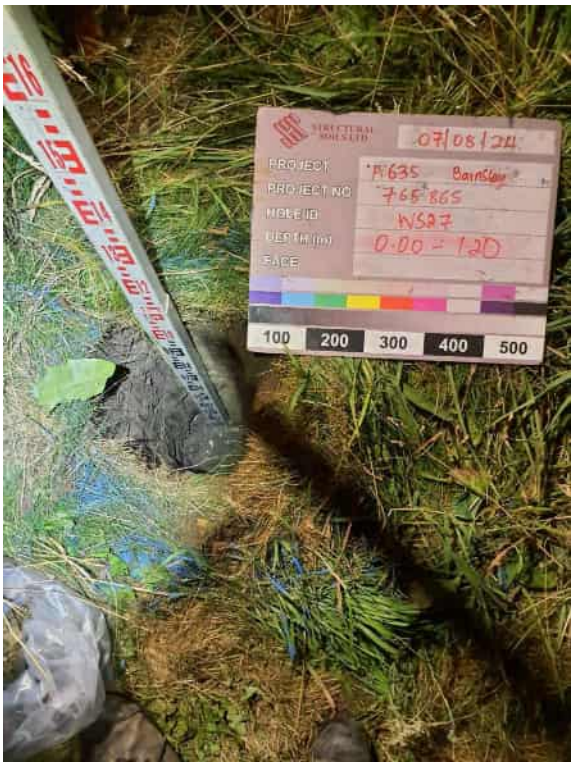
STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
A635 Barnsley Bus RapidTransit Route		**Barnsley Metropolitan Borough council**		**WS27**
Contract Ref:	Start: **07.08.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
765865	End: **07.08.24**	**49.22**	**E:437250.7 N:405485.6**	**2** of **3**



Method Used:	**Inspection pit + Tracked window sampling**	Plant Used:	**Archway Competitor**	Drilled By:	**Ben Pine**	Logged By:	**KAdedotun**	Checked By:	AG

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log WINDOW SAMPLE LOG - A4P | 765865_A635_BARNSLEY_BUS_RAPIDTRANSIT_ROUTE.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
A635 Barnsley Bus RapidTransit Route		**Barnsley Metropolitan Borough council**		**WS27**
Contract Ref:	Start: **07.08.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
765865	End: **07.08.24**	**49.22**	**E:437250.7 N:405485.6**	**3** of **3**

Method Used:	**Inspection pit + Tracked window sampling**	Plant Used:	**Archway Competitor**	Drilled By:	**Ben Pine**	Logged By:	**KAdedotun**	Checked By:	AG	AGS

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log WINDOW SAMPLE LOG - A4P | 765865_A635_BARNSLEY_BUS_RAPIDTRANSIT_ROUTE.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
A635 Barnsley Bus RapidTransit Route	**Barnsley Metropolitan Borough council**	**WS28**

Contract Ref:	Start: **08.08.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
765865	End: **08.08.24**	**49.83**	**E:437242.6 N:405468.2**	**1** of **3**

Progress	Samples / Tests				Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results						
	0.10-0.20	1	D				MADE GROUND: Brown friable slightly sandy slightly gravelly CLAY. Sand is fine. Gravel is angular to subangular fine to coarse of limestone and bricks fragments. (MADE GROUND)		(0.70)	
	0.10	101	ES	1xT+1xJ+1xV						
	0.10-0.40	2	B					49.13	0.70	
	0.80-0.90	3	D				MADE GROUND: Light brown angular to subanguar medium to coarse GRAVEL of limestone. (MADE GROUND)			
	0.80-1.00	4	B							
	1.20-1.65	5	SPT	N=15					(1.15)	
	1.20-1.65	6	DSPT							
1.20 - 1.65 (98mm dia) 100% rec	1.20-1.45	7	D							
	1.50-1.70	102	ES	1xT+1xJ+1xV						
	1.65-2.10	8	SPT	N=38						
	1.65-2.10	9	DSPT							
1.65 - 2.10 (85mm dia) 100% rec	1.70-1.85	10	D					47.98	1.85	
	1.85-2.10	103	ES	1xT+1xJ+1xV			Extremely weak grey MUDSTONE. (MADE GROUND)			
	2.10-2.33	11	SPT	8,15/50 for 75mm					(0.48)	
	2.10-2.33	12	DSPT					47.50	2.33	
							Window Sample terminated at 2.33m on SPT refusal.			

Drilling Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
08/08/24	13:17	2.33	-		-

General Remarks

1. Position scanned with CAT and Genny prior to drilling.
2. Hand dug inspection pit to 1.20m depth.
3. Location terminated at 2.33m on refusal.
4. No groundwater encountered.
5. Backfilled on completion.
6. SPT hammer DART384-2024 (E_r = 68.00%) used.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Tracked window sampling	**Archway Competitor**	**Ben Pine**	**KAdedotun**	AG

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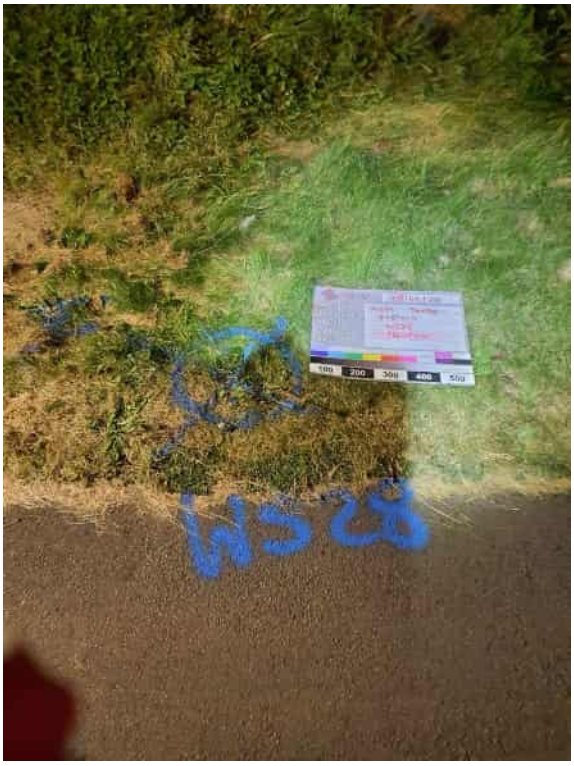
STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
A635 Barnsley Bus RapidTransit Route		**Barnsley Metropolitan Borough council**		**WS28**
Contract Ref:	Start: **08.08.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
765865	End: **08.08.24**	**49.83**	**E:437242.6 N:405468.2**	**2** of **3**



Method Used:	**Inspection pit + Tracked window sampling**	Plant Used:	**Archway Competitor**	Drilled By:	**Ben Pine**	Logged By:	**KAdedotun**	Checked By:	AG

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STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
A635 Barnsley Bus RapidTransit Route		**Barnsley Metropolitan Borough council**		**WS28**
Contract Ref:	Start: **08.08.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
765865	End: **08.08.24**	**49.83**	**E:437242.6 N:405468.2**	**3** of **3**

Method Used:	**Inspection pit + Tracked window sampling**	Plant Used:	**Archway Competitor**	Drilled By:	**Ben Pine**	Logged By:	**KAdedotun**	Checked By:	AG

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log WINDOW SAMPLE LOG - A4P | 765865_A635_BARNSLEY_BUS_RAPIDTRANSIT_ROUTE.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
A635 Barnsley Bus RapidTransit Route	**Barnsley Metropolitan Borough council**	**WS29**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
765865	**21.08.24** End: **21.08.24**	**52.11**	**E:437500.0 N:405365.1**	**1** of **3**

Progress	Samples / Tests				Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results						
	0.25	1	ES				MADE GROUND: TARMAC.	52.01	0.10	
							(MADE GROUND)	51.96	0.15	
							MADE GROUND: Yellowish brown sandy silty gravel. Sand is fine. Gravel is angular fine to medium stone aggregate. (MADE GROUND)		(0.30)	
								51.66	0.45	
							MADE GROUND: Dark grey sandy silty angular to subangular fine to coarse GRAVEL of sandstone, mudstone and glass fragments. Sand is fine. (MADE GROUND)			
							Window sample hole terminated at 0.45m depth on very dense gravel.			

Drilling Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

1. Position scanned with CAT and Genny prior to drilling.
2. Hand dug inspection pit to 0.45m depth.
3. Location terminated at 0.45m due to refusal.
4. No groundwater encountered.
5. Backfilled on completion.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Tracked window sampling	**Archway Competitor**	**Sam Keenan**	**JMyles**	AG

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STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
A635 Barnsley Bus RapidTransit Route		**Barnsley Metropolitan Borough council**		**WS29**
Contract Ref:	Start: **21.08.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
765865	End: **21.08.24**	**52.11**	**E:437500.0 N:405365.1**	**2** of **3**

Method Used:	**Inspection pit + Tracked window sampling**	Plant Used:	**Archway Competitor**	Drilled By:	**Sam Keenan**	Logged By:	**JMyles**	Checked By:	AG

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log WINDOW SAMPLE LOG - A4P | 765865_A635_BARNSLEY_BUS_RAPIDTRANSIT_ROUTE.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
A635 Barnsley Bus RapidTransit Route		**Barnsley Metropolitan Borough council**		**WS29**
Contract Ref:	Start: **21.08.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
765865	End: **21.08.24**	**52.11**	**E:437500.0 N:405365.1**	**3** of **3**

Method Used:	**Inspection pit + Tracked window sampling**	Plant Used:	**Archway Competitor**	Drilled By:	**Sam Keenan**	Logged By:	**JMyles**	Checked By:	AG

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log WINDOW SAMPLE LOG - A4P | 765865_A635_BARNSLEY_BUS_RAPIDTRANSIT_ROUTE.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
A635 Barnsley Bus RapidTransit Route	**Barnsley Metropolitan Borough council**	**WS29A**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
765865	**21.08.24**	**---**	**---**	**1** of **4**
	End: **21.08.24**			

Progress	Samples / Tests				Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results						
							MADE GROUND: TARMAC.		0.10	
							(MADE GROUND)		0.15	
							MADE GROUND: Yellowish brown sandy silty angular fine to medium GRAVEL of type 1 aggregates. Sand is fine. (MADE GROUND)			
	0.50	1	B				MADE GROUND: Dark grey sandy silty angular to subangular fine to coarse GRAVEL of sandstone, mudstone with glass fragments gravel size. Sand is fine. (MADE GROUND) . . . At 0.60m gravel contains brick. . . . At 0.70m cobbles.		(1.05)	
	0.50	2	D							
	1.00	3	B							
	1.00	4	D							
	1.10	101	ES							
	1.10	5	B						1.20	
	1.20-1.65	1	SPT	N=2			MADE GROUND: Dark greyish brown slighlty sandy gravelly silty CLAY. Sand is fine. Gravel is angular to subangular fine to medium of sandstone and brick fragments, (MADE GROUND)		(0.30)	
	1.40	102	ES						1.50	
	1.60-2.00	6	D				Firm light orangish brown mottled grey silty CLAY.			
	2.00-2.45	2	SPT	N=11						
	2.00-3.00	7	B				. . . From 2.10m becoming stiff to very stiff, brown mottled grey.		(1.82)	
	2.50	103	ES							
	3.00-3.32	3	SPT	3,4/15,15,20 for 20mm					3.32	
							Window Sample terminated at 3.32m on SPT refusal.			

Drilling Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

1. Position scanned with CAT and Genny prior to drilling.
2. Hand dug inspection pit to 1.20m depth.
3. Location terminated at 3.32m on refusal.
4. No groundwater encountered.
5. Backfilled on completion.
6. SPT hammer 110.49-2024 (E_r = 81.00%) used.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Tracked window sampling	**Archway Competitor**	**Sam Keenan**	**JMyles**	AG

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STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
A635 Barnsley Bus RapidTransit Route		**Barnsley Metropolitan Borough council**		**WS29A**
Contract Ref:	Start: **21.08.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
765865	End: **21.08.24**	**---**	**---**	**2** of **4**

Method Used:	**Inspection pit + Tracked window sampling**	Plant Used:	**Archway Competitor**	Drilled By:	**Sam Keenan**	Logged By:	**JMyles**	Checked By:	AG

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STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
A635 Barnsley Bus RapidTransit Route		**Barnsley Metropolitan Borough council**		**WS29A**
Contract Ref:	Start: **21.08.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
765865	End: **21.08.24**	**---**	**---**	**3** of **4**

Method Used:	**Inspection pit + Tracked window sampling**	Plant Used:	**Archway Competitor**	Drilled By:	**Sam Keenan**	Logged By:	**JMyles**	Checked By:	AG

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STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
A635 Barnsley Bus RapidTransit Route		**Barnsley Metropolitan Borough council**		**WS29A**
Contract Ref:	Start: **21.08.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
765865	End: **21.08.24**	**---**	**---**	**4** of **4**

Method Used:	**Inspection pit + Tracked window sampling**	Plant Used:	**Archway Competitor**	Drilled By:	**Sam Keenan**	Logged By:	**JMyles**	Checked By:	AG

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STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
A635 Barnsley Bus RapidTransit Route	**Barnsley Metropolitan Borough council**	**WS30**

Contract Ref:	Start: **14.08.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
765865	End: **14.08.24**	**51.02**	**E:437573.8 N:405294.6**	**1** of **4**

Progress	Samples / Tests				Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results						
	0.10-0.20	1	B				MADE GROUND: Brown slightly gravelly silty fine SAND. Gravel are angular to subangular fine to medium of bricks, sandstone and tarmac. (MADE GROUND)	50.82	0.20	
	0.10	101	ES	1xT+1xJ+1xV						
	0.20-0.30	2	D							
	0.30	102	ES	1xT+1xJ+1xV						
	0.30-0.60	3	B				MADE GROUND: Black gravelly fine to coarse SAND/ASH. Gravel is angular to subangular fine to coarse of ash and tarmac. (MADE GROUND)	50.42	(0.40) 0.60	
	0.60-0.70	4	D				MADE GROUND: Reddish brown gravelly fine to coarse SAND. Gravel is angular to subangular fine to coarse of bricks fragments. (MADE GROUND)	50.12	(0.30) 0.90	
	0.70-0.90	5	B							
	1.00-1.10	6	D				Firm light brown mottled light grey silty CLAY.	49.12	(1.00) 1.90	
	1.00-1.20	7	B							
	1.20-1.65	8	SPT	N=4						
	1.20-1.65	9	DSPT							
1.20 - 2.00 (85mm dia) 80% rec	1.40-1.90	10	B							
	1.90-2.00	11	D				Stiff orangish brown mottled light grey slightly sandy silty CLAY.	48.62	(0.50) 2.40	
	2.00-2.45	12	SPT	N=11						
	2.00-2.45	13	DSPT							
	2.00-2.40	14	B							
2.00 - 3.00 (75mm dia) 100% rec	2.40-2.95	15	B				Very stiff light brown and light grey CLAY with abundant >30% angular to subangular lithorelicts of extremely weak siltstone and mudstone.	48.07	(0.55) 2.95	
	3.00-3.45	16	SPT	N=50			Light brown and light grey MUDSTONE. (PENNINE MIDDLE COAL MEASURES FORMATION)	47.57	(0.50) 3.45	
							Window Sample terminated at 3.45m depth on mudstone.			

Drilling Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)
14/08/24	12:47	3.39	-		-

General Remarks

1. Position scanned with CAT and Genny prior to drilling.
2. Hand dug inspection pit to 1.20m depth.
3. Location terminated at 3.45m due to refusal.
4. No groundwater encountered.
5. 50mm standpipe installed on completion.
6. SPT hammer 110.49-2024 (E_r = 81.00%) used.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Tracked window sampling	**Archway Competitor**	**Sam Keenan**	**KAdedotun**	AG

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STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
A635 Barnsley Bus RapidTransit Route		**Barnsley Metropolitan Borough council**		**WS30**
Contract Ref:	Start: **14.08.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
765865	End: **14.08.24**	**51.02**	**E:437573.8 N:405294.6**	**2** of **4**

Method Used:	**Inspection pit + Tracked window sampling**	Plant Used:	**Archway Competitor**	Drilled By:	**Sam Keenan**	Logged By:	**KAdedotun**	Checked By:	AG

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STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
A635 Barnsley Bus RapidTransit Route		**Barnsley Metropolitan Borough council**		**WS30**
Contract Ref:	Start: **14.08.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
765865	End: **14.08.24**	**51.02**	**E:437573.8 N:405294.6**	**3** of **4**

Method Used:	**Inspection pit + Tracked window sampling**	Plant Used:	**Archway Competitor**	Drilled By:	**Sam Keenan**	Logged By:	**KAdedotun**	Checked By:	AG

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log WINDOW SAMPLE LOG - A4P | 765865_A635_BARNSLEY_BUS_RAPIDTRANSIT_ROUTE.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
A635 Barnsley Bus RapidTransit Route		**Barnsley Metropolitan Borough council**		**WS30**
Contract Ref:	Start: **14.08.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
765865	End: **14.08.24**	**51.02**	**E:437573.8 N:405294.6**	**4** of **4**

Method Used:	**Inspection pit + Tracked window sampling**	Plant Used:	**Archway Competitor**	Drilled By:	**Sam Keenan**	Logged By:	**KAdedotun**	Checked By:	AG

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STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
A635 Barnsley Bus RapidTransit Route	**Barnsley Metropolitan Borough council**	**WS31**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
765865	**14.08.24** End: **14.08.24**	**49.51**	**E:437674.7 N:405184.1**	**1** of **4**

Progress	Samples / Tests				Water	Backfill & Instrumentation	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results						
	0.10-0.20	1	D				MADE GROUND: Dark brown/black gravelly SAND/ASH. Gravel is angular to subangular fine to coarse of sandstone, concrete, slag and tarmac fragments. (MADE GROUND)		(0.57)	
	0.10	101	ES	1xT+1xJ+1xV						
	0.10-0.40	2	B					48.94	0.57	
	0.60	102	ES	1xT+1xJ+1xV			Stiff light brown mottled light grey CLAY.			
	0.60-0.70	3	D							
	0.70-1.00	4	B							
1.20 - 2.00 (85mm dia) 100% rec	1.20-1.65	1	SPT	N=5					(2.13)	
	1.20-1.65	6	DSPT							
	1.20-2.00	7	B							
2.00 - 3.00 (75mm dia) 100% rec	2.00-2.45	2	SPT	N=15			2.10 to 2.70m very stiff clay			
	2.00-2.45	9	DSPT							
	2.10-2.70	10	B					46.81	2.70	
	2.70-2.85	11	D				Extremely weak light brown and light grey MUDSTONE. (PENNINE MIDDLE COAL MEASURES FORMATION)		(0.64)	
	3.00-3.34	3	SPT	6,7/14,17,19 for 40mm						
	3.00-3.34	13	DSPT					46.17	3.34	
							Window Sample terminated at 3.34m on SPT refusal.			

Drilling Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

1. Position scanned with CAT and Genny prior to drilling.
2. Hand dug inspection pit to 1.20m depth.
3. Location terminated at 3.34m due to refusal.
4. No groundwater encountered.
5. 50mm standpipe installed on completion.
6. SPT hammer 110.49-2024 (E_r = 81.00%) used.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Tracked window sampling	**Archway Competitor**	**Sam Keenan**	**BSaimen**	AG

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STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
A635 Barnsley Bus RapidTransit Route		**Barnsley Metropolitan Borough council**		**WS31**
Contract Ref:	Start: **14.08.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
765865	End: **14.08.24**	**49.51**	**E:437674.7 N:405184.1**	**2** of **4**

Method Used:	**Inspection pit + Tracked window sampling**	Plant Used:	**Archway Competitor**	Drilled By:	**Sam Keenan**	Logged By:	**BSaimen**	Checked By:	AG

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log WINDOW SAMPLE LOG - A4P | 765865_A635_BARNSLEY_BUS_RAPIDTRANSIT_ROUTE.GPJ - v10_01.
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FINAL

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
A635 Barnsley Bus RapidTransit Route		**Barnsley Metropolitan Borough council**		**WS31**
Contract Ref:	Start: **14.08.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
765865	End: **14.08.24**	**49.51**	**E:437674.7 N:405184.1**	**3** of **4**

Method Used:	**Inspection pit + Tracked window sampling**	Plant Used:	**Archway Competitor**	Drilled By:	**Sam Keenan**	Logged By:	**BSaimen**	Checked By:	AG

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STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
A635 Barnsley Bus RapidTransit Route		**Barnsley Metropolitan Borough council**		**WS31**
Contract Ref:	Start: **14.08.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
765865	End: **14.08.24**	**49.51**	**E:437674.7 N:405184.1**	**4** of **4**

Method Used:	**Inspection pit + Tracked window sampling**	Plant Used:	**Archway Competitor**	Drilled By:	**Sam Keenan**	Logged By:	**BSaimen**	Checked By:	AG

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STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
A635 Barnsley Bus RapidTransit Route	**Barnsley Metropolitan Borough council**	**WS32**

Contract Ref:	Start: **20.08.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
765865	End: **20.08.24**	**47.50**	**E:437790.5 N:404981.6**	**1** of **3**

Progress	Samples / Tests				Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results						
	0.20	1	ES				MADE GROUND: Grass over brown gravelly sandy silty CLAY, Sand is fine. Gravel is angular to subangular fine to medium mudstone and stone aggregate. (MADE GROUND)	47.25	0.25	
	0.50 0.50	2 3	B D				MADE GROUND: Greyish brown sandy silty GRAVEL. Sand is fine. Gravel is angular to subangular fine to coarse stone aggregate, sandstone, ash and brick fragments. (MADE GROUND)		(1.65)	
	1.00 1.00 1.10 1.20-1.65 1.20-1.90	4 5 6 1 8	B D ES SPT B	N=6				45.60	1.90	
	1.50	7	D							
	2.00-2.45 2.00-3.00 2.10	2 11 9	SPT B ES	N=16			MADE GROUND: Orangish greyish brown sandy gravelly silty CLAY. Sand is fine to medium. Gravel is angular to subangular sandstone, brick fragments and ash. (MADE GROUND)		(1.20)	
	2.50	10	D					44.40	3.10	
	3.00-3.45 3.10-4.00	3 13	SPT B	N=26			Stiff to very stiff orangish brown mottled grey silty CLAY. From 3.30m becoming orangish brown, from 3.50, recovered gravelly clay.		(1.30)	
	3.30	12	ES							
	4.00-4.40	4	SPT	11,12/12,13,14,11 for 20mm				43.10	4.40	
							Window Sample terminated at 4.40m depth on mudstone.			

Drilling Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

1. Position scanned with CAT and Genny prior to drilling.
2. Hand dug inspection pit to 1.20m depth.
3. Location terminated at 4.40m due to refusal.
4. No groundwater encountered.
5. Backfilled on completion.
6. SPT hammer 110.49-2024 (E_r = 81.00%) used.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Tracked window sampling	**Archway Competitor**	**Sam Keenan**	**JMyles**	AG

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STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
A635 Barnsley Bus RapidTransit Route		**Barnsley Metropolitan Borough council**		**WS32**
Contract Ref:	Start: **20.08.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
765865	End: **20.08.24**	**47.50**	**E:437790.5 N:404981.6**	**2** of **3**

Method Used:	**Inspection pit + Tracked window sampling**	Plant Used:	**Archway Competitor**	Drilled By:	**Sam Keenan**	Logged By:	**JMyles**	Checked By:	AG

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log WINDOW SAMPLE LOG - A4P | 765865_A635_BARNSLEY_BUS_RAPIDTRANSIT_ROUTE.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
A635 Barnsley Bus RapidTransit Route		**Barnsley Metropolitan Borough council**		**WS32**
Contract Ref:	Start: **20.08.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
765865	End: **20.08.24**	**47.50**	**E:437790.5 N:404981.6**	**3** of **3**

Method Used:	**Inspection pit + Tracked window sampling**	Plant Used:	**Archway Competitor**	Drilled By:	**Sam Keenan**	Logged By:	**JMyles**	Checked By:	AG

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log WINDOW SAMPLE LOG - A4P | 765865_A635_BARNSLEY_BUS_RAPIDTRANSIT_ROUTE.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
A635 Barnsley Bus RapidTransit Route	**Barnsley Metropolitan Borough council**	**WS33**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
765865	**13.08.24** End: **13.08.24**	**44.70**	**E:437272.4 N:405725.1**	**1** of **5**

Progress	Samples / Tests				Water	Backfill & Instru-mentation	Description of Strata	Reduced Level	Depth (Thick ness)	Material Graphic Legend
Window Run	Depth	No	Type	Results						
	0.10	101	ES	1xT+1xJ+1xV			Dark brown friable slightly sandy slightly gravelly CLAY (TOPSOIL). Sand is fine. Gravel is angular to subangular fine to coarse of sandstone.	44.50	0.20	
	0.20-2.70	1	B							
	0.30	102	ES	1xT+1xJ+1xV			Stiff grey mottled light brown slightly gravelly silty CLAY. Gravel is angular to subangular fine to coarse of mudstone and siltstone.			
	0.30-0.40	2	D							
	0.40-0.90	3	B							
1.20 - 2.00 (85mm dia) 100% rec	1.20-1.65	4	SPT	N=4					(2.50)	
	1.20-1.65	5	DSPT							
	1.20-2.00	6	B							
2.00 - 3.00 (75mm dia) 90% rec	2.00-2.45	7	SPT	N=6				42.00	2.70	
	2.00-2.45	8	DSPT							
	2.10-2.70	9	B							
	2.70-2.80	10	D				Stiff grey slightly gravelly CLAY. Gravel is angular to subangular fine to medium of coal.		(0.30)	
								41.70	3.00	
3.00 - 4.00 (65mm dia) 100% rec	3.00-3.45	11	SPT	N=8			Stiff greenish grey silty CLAY.		(0.74)	
	3.00-3.45	12	DSPT							
	3.00-3.74	13	B					40.96	3.74	
	3.74-3.90	14	D				Extremely weak light brown and grey SILTSTONE. (PENNINE MIDDLE COAL MEASURES FORMATION)		(0.56)	
	4.00-4.30	15	SPT	10,13/29,10 for 75mm						
	4.00-4.24	16	DSPT					40.40	4.30	
							Window Sample terminated at 4.30m depth on SPT refusal.			

Drilling Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

1. Position scanned with CAT and Genny prior to drilling.
2. Hand dug inspection pit to 1.20m depth.
3. Location terminated at 4.30m on refusal.
4. No groundwater encountered.
5. 50mm standpipe installed on completion.
6. SPT hammer 110.49-2024 (E_r = 81.00%) used.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Tracked window sampling	**Archway Competitor**	**Sam Keenan**	**KAdedotun**	AG

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STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
A635 Barnsley Bus RapidTransit Route		**Barnsley Metropolitan Borough council**		**WS33**
Contract Ref:	Start: **13.08.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
765865	End: **13.08.24**	**44.70**	**E:437272.4 N:405725.1**	**2** of **5**

Method Used:	**Inspection pit + Tracked window sampling**	Plant Used:	**Archway Competitor**	Drilled By:	**Sam Keenan**	Logged By:	**KAdedotun**	Checked By:	AG

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log WINDOW SAMPLE LOG - A4P | 765865_A635_BARNSLEY_BUS_RAPIDTRANSIT_ROUTE.GPJ - v10_01.
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STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
A635 Barnsley Bus RapidTransit Route		**Barnsley Metropolitan Borough council**		**WS33**
Contract Ref:	Start: **13.08.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
765865	End: **13.08.24**	**44.70**	**E:437272.4 N:405725.1**	**3** of **5**

Method Used:	**Inspection pit + Tracked window sampling**	Plant Used:	**Archway Competitor**	Drilled By:	**Sam Keenan**	Logged By:	**KAdedotun**	Checked By:	AG

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STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
A635 Barnsley Bus RapidTransit Route		**Barnsley Metropolitan Borough council**		**WS33**
Contract Ref:	Start: **13.08.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
765865	End: **13.08.24**	**44.70**	**E:437272.4 N:405725.1**	**4** of **5**

Method Used:	**Inspection pit + Tracked window sampling**	Plant Used:	**Archway Competitor**	Drilled By:	**Sam Keenan**	Logged By:	**KAdedotun**	Checked By:	AG

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log WINDOW SAMPLE LOG - A4P | 765865_A635_BARNSLEY_BUS_RAPIDTRANSIT_ROUTE.GPJ - v10_01.
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WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
A635 Barnsley Bus RapidTransit Route		**Barnsley Metropolitan Borough council**		**WS33**
Contract Ref:	Start: **13.08.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
765865	End: **13.08.24**	**44.70**	**E:437272.4 N:405725.1**	**5** of **5**

Method Used:	**Inspection pit + Tracked window sampling**	Plant Used:	**Archway Competitor**	Drilled By:	**Sam Keenan**	Logged By:	**KAdedotun**	Checked By:	AG

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log WINDOW SAMPLE LOG - A4P | 765865_A635_BARNSLEY_BUS_RAPIDTRANSIT_ROUTE.GPJ - v10_01.
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WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
A635 Barnsley Bus RapidTransit Route	**Barnsley Metropolitan Borough council**	**WS34**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
765865	**13.08.24** End: **13.08.24**	**42.60**	**E:437260.4 N:405788.7**	**1** of **4**

Progress	Samples / Tests				Water	Backfill	Description of Strata	Reduced Level	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results						
	0.10-0.20 0.10 0.10-0.50	1 101 2	D ES B	1xT+1xJ+1xV			MADE GROUND: Friable brown slightly gravelly CLAY. Gravel is angular to subangular fine to coarse of sandstone, mudstone, concrete and bricks fragments. (MADE GROUND)		(1.30)	
	1.20-1.65 1.20-1.65	1 4	SPT DSPT	N=9				41.30	1.30	
1.20 - 2.00 (85mm dia) 100% rec	1.40-1.50 1.50-1.60 1.60-2.00	102 5 6	ES D B	1xT+1xJ+1xV			Stiff light brown slightly gravelly silty CLAY. Gravel is angular to subangular fine to medium of mudstone and coal.		(1.30)	
	2.00-2.45 2.00-2.45	2 8	SPT DSPT	N=15			2.45 to 2.60. No recovery.	40.00	2.60	
2.00 - 3.00 (65mm dia) 40% rec	2.60-2.80	9	D				Stiff light brown mottled grey slightly gravelly CLAY. Gravel is angular to subangular fine to medium of mudstone and coal.		(0.85)	
	3.00-3.45	11	DSPT					39.15	3.45	
							Window Sample terminated at 3.45m depth due to material collapsing.			

Drilling Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

1. Position scanned with CAT and Genny prior to drilling.
2. Hand dug inspection pit to 1.20m depth.
3. Location terminated at 3.45m depth due to material collapsing.
4. No groundwater encountered.
5. Backfilled on completion.
6. SPT hammer 110.49-2024 (E_r = 81.00%) used.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Tracked window sampling	**Archway Competitor**	**Sam Keenan**	**KAdedotun**	AG

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log WINDOW SAMPLE LOG - A4P | 765865_A635_BARNSLEY_BUS_RAPIDTRANSIT_ROUTE.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Castleford: The Potteries, Pottery Street, Castleford, West Yorkshire, WF10 1NJ. Tel: 01977-552255, Fax: 01977-552299, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 10/12/24 - 14:57 | MG1 |

STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
A635 Barnsley Bus RapidTransit Route		**Barnsley Metropolitan Borough council**		**WS34**
Contract Ref:	Start: **13.08.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
765865	End: **13.08.24**	**42.60**	**E:437260.4 N:405788.7**	**2** of **4**

Method Used:	**Inspection pit + Tracked window sampling**	Plant Used:	**Archway Competitor**	Drilled By:	**Sam Keenan**	Logged By:	**KAdedotun**	Checked By:	AG

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log WINDOW SAMPLE LOG - A4P | 765865_A635_BARNSLEY_BUS_RAPIDTRANSIT_ROUTE.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Castleford: The Potteries, Pottery Street, Castleford, West Yorkshire, WF10 1NJ. Tel: 01977-552255, Fax: 01977-552299, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 10/12/24 - 14:57 | MG1 |

STRUCTURAL SOILS

FINAL

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
A635 Barnsley Bus RapidTransit Route		**Barnsley Metropolitan Borough council**		**WS34**
Contract Ref:	Start: **13.08.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
765865	End: **13.08.24**	**42.60**	**E:437260.4 N:405788.7**	**3** of **4**

Method Used:	**Inspection pit + Tracked window sampling**	Plant Used:	**Archway Competitor**	Drilled By:	**Sam Keenan**	Logged By:	**KAdedotun**	Checked By:	AG

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log WINDOW SAMPLE LOG - A4P | 765865_A635_BARNSLEY_BUS_RAPIDTRANSIT_ROUTE.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Castleford: The Potteries, Pottery Street, Castleford, West Yorkshire, WF10 1NJ. Tel: 01977-552255, Fax: 01977-552299, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 10/12/24 - 14:57 | MG1 |

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FINAL

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
A635 Barnsley Bus RapidTransit Route		**Barnsley Metropolitan Borough council**		**WS34**
Contract Ref:	Start: **13.08.24**	Ground Level:	National Grid Co-ordinate:	Sheet:
765865	End: **13.08.24**	**42.60**	**E:437260.4 N:405788.7**	**4** of **4**

Method Used:	**Inspection pit + Tracked window sampling**	Plant Used:	**Archway Competitor**	Drilled By:	**Sam Keenan**	Logged By:	**KAdedotun**	Checked By:	AG

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log WINDOW SAMPLE LOG - A4P | 765865_A635_BARNSLEY_BUS_RAPIDTRANSIT_ROUTE.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Castleford: The Potteries, Pottery Street, Castleford, West Yorkshire, WF10 1NJ. Tel: 01977-552255, Fax: 01977-552299, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 10/12/24 - 14:57 | MG1 |

SUMMARY OF INSTALLATION AND PIEZOMETER CHARACTERISTICS

Exploratory Position ID	Pipe Caption	Cover Level (m)	Cover Type	Pipe Top Level (m)	Ground Level	Length of Pipe (m)	Piezo meter Depth (m)	Response Zone Top (m)	Response Zone Base (m)	Slotted Pipe Top (m)	Slotted Pipe Base (m)	Pipe Internal Diameter (mm)	Targetted Ground	Remarks
BH01	---	---	Flush Cover	---	53.84	4.00	---	1.00	4.50	1.50	4.00	50	---	
BH03	Shallow	---	Flush Cover	---	52.88	8.50	---	5.00	8.50	5.00	8.50	50	---	
BH06	Shallow	---	Flush Cover	---	52.47	4.00	---	1.00	4.00	1.00	4.00	50	---	
BH07	Shallow	---	Flush Cover	---	46.57	10.00	---	1.00	10.00	1.00	10.00	50	---	
BH08	Shallow	---	Flush Cover	---	52.38	15.00	---	7.00	15.00	7.00	15.00	50	---	
BH11	Shallow	---	Flush Cover	---	53.28	15.00	---	9.00	15.00	9.00	15.00	50	---	
BH12	Shallow	---	Flush Cover	---	46.16	6.00	---	2.90	6.10	3.00	6.00	50	---	
BH13	Shallow	---	Flush Cover	---	47.10	3.00	---	1.50	3.00	1.50	3.00	50	---	
BH16	Shallow	---	Flush Cover	---	52.96	7.50	---	2.00	7.50	2.00	7.50	50	---	

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Compiled By		Date	Contract Ref:
	MGALAN	21.10.24	765865
Contract: A635 Barnsley Bus RapidTransit Route			Page: 1 of 2

SUMMARY OF INSTALLATION AND PIEZOMETER CHARACTERISTICS

Exploratory Position ID	Pipe Caption	Cover Level (m)	Cover Type	Pipe Top Level (m)	Ground Level	Length of Pipe (m)	Piezo meter Depth (m)	Response Zone Top (m)	Response Zone Base (m)	Slotted Pipe Top (m)	Slotted Pipe Base (m)	Pipe Internal Diameter (mm)	Targetted Ground	Remarks
WS06	Shallow	---	Flush Cover	---	52.74	3.60	---	1.00	3.60	1.00	3.60	50	---	
WS17	Shallow	---	Flush Cover	---	46.82	3.70	---	1.00	3.70	1.00	3.70	50	---	
WS19	Shallow	---	Flush Cover	---	46.82	5.00	---	2.00	5.00	2.00	5.00	50	---	
WS20	Shallow	---	Flush Cover	---	44.51	2.00	---	1.00	2.00	0.00	2.00	50	---	
WS31	Shallow	---	Flush Cover	---	49.51	3.00	---	1.00	3.00	1.00	3.00	50	---	
WS33	Shallow	---	Flush Cover	---	44.70	3.50	---	1.00	3.50	1.00	3.50	50	---	

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APPENDIX C -
IN-SITU TESTING

(i) Standard Penetration Test (SPT) Summary Sheet

(ii) SPT N Value versus Depth Plots

STANDARD PENETRATION TEST SUMMARY TABLE

Exploratory Position ID	Depth (m)	Hole Dia (mm)	Casing Depth (m)	Water Depth (m)	Seating Drive		Test Drive			Hammer ID	Calibration Date	Energy Ratio (%)	N_{60}	Comments
					Blows	Pen (mm)	Blows	R (mm)	Result					
BH01	1.30				0,1	150	1,1,1,1		N=4	AR3874-2024	22/07/2024	65	4	
	2.00				1,1	150	3,7,10,10		N=30	AR3874-2024	22/07/2024	65	32	
BH02	1.20			Dry	1,1	150	1,2,3,3		N=9	AR3874-2024	22/07/2024	65	10	
	3.00		3.00	0.30	5,13	150	16,20,14+	190	5,13/16,20,14	AR3874-2024	22/07/2024	65		
									for 40mm					
BH03	1.20		0.00	Dry	1,3	150	3,3,3,3		N=12	AR3874-2024	22/07/2024	65	13	
	3.00		3.00	2.00	1,10	150	29,21+	120	1,10/29,21	AR3874-2024	22/07/2024	65		
									for 45mm					
BH06	1.50		1.50	Dry	1,0	150	1,1,1,2		N=5	AR1862-2024	15/02/2024	70	6	
	3.50		3.00	Dry	1,0	150	1,2,3,6		N=12	AR1862-2024	15/02/2024	70	14	
	4.50		4.20	Dry	10,11	150	20,24,6+	160	10,11/20,24,6	AR1862-2024	15/02/2024	70		
									for 10mm					
	6.00		4.20	Dry	7,11	150	12,13,15,10+	260	7,11/12,13,15,10	AR1862-2024	15/02/2024	70		
									for 35mm					
BH07	1.20	150		Dry	2,1	150	2,2,4,6		N=14	AR1626-2024	16/04/2024	65	15	
	2.20	150		Dry	3,3	150	5,5,5,6		N=21	AR1626-2024	16/04/2024	65	23	
BH07	3.20	150		Dry	4,7	150	9,11,16,14+	295	4,7/9,11,16,14	AR1626-2024	16/04/2024	65		

Notes:
1. **Tests carried out in general accordance with BS EN ISO 22476-3:2005+A1:2011.**
2. **Reported blows are for 75mm penetration unless indicated "+".**
3. **Where full test drive was not achieved, actual penetration (R) and total test drive blows are reported.**
4. **Tests carried out using a split spoon sampler unless noted as SPT(c) (denotes use of solid cone method) in the comments column.**
5. **Entries in the water depth column reflects the measured water depth at time of test.**
6. **Results marked with * indicate an extrapolated reading from tests not achieving the full 450mm penetration**

N_{60} = (Measured hammer energy ratio / 60) x N value

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STANDARD PENETRATION TEST SUMMARY TABLE

Exploratory Position ID	Depth (m)	Hole Dia (mm)	Casing Depth (m)	Water Depth (m)	Seating Drive		Test Drive			Hammer ID	Calibration Date	Energy Ratio (%)	N_{60}	Comments
					Blows	Pen (mm)	Blows	R (mm)	Result					
									for 70mm					
BH08	1.50		1.50	Dry	5,6	150	10,7,5,6		N=28	AR1862-2024	15/02/2024	70	33	
	2.50		2.50	Dry	1,0	150	1,1,1,2		N=5	AR1862-2024	15/02/2024	70	6	
	4.50		4.50	Dry	2,3	150	3,4,4,5		N=16	AR1862-2024	15/02/2024	70	19	
	7.50		7.50	Dry	9,10	150	13,17,20+	220	9,10/13,17,20	AR1862-2024	15/02/2024	70		
									for 70mm					
	9.00		7.50	Dry	15,10	110	25,25+	130	15,10/25,25	AR1862-2024	15/02/2024	70		
									for 55mm					
BH09	1.50		1.50	Dry	2,3	150	3,3,4,4		N=14	AR1862-2024	15/02/2024	70	16	
	3.50		3.00	Dry	1,1	150	2,2,3,4		N=11	AR1862-2024	15/02/2024	70	13	
	6.00		4.50	Dry	1,1	150	2,3,3,4		N=12	AR1862-2024	15/02/2024	70	14	
	9.00		6.00	Dry	7,8	150	9,11,15,15+	280	7,8/9,11,15,15	AR1862-2024	15/02/2024	70		
									for 55mm					
	10.50		6.00	Dry	12,12	150	20,30+	140	12,12/20,30	AR1862-2024	15/02/2024	70		
									for 65mm					
BH10	1.50	200	1.50	Dry	3,4	150	3,4,4,5		N=16	AR1862-2024	15/02/2024	70	19	
	2.50	200	2.50	Dry	3,3	150	4,4,4,5		N=17	AR1862-2024	15/02/2024	70	20	
	4.50	200	4.50	Dry	2,2	150	3,3,4,4		N=14	AR1862-2024	15/02/2024	70	16	

Notes:
1. Tests carried out in general accordance with BS EN ISO 22476-3:2005+A1:2011.
2. Reported blows are for 75mm penetration unless indicated "+".
3. Where full test drive was not achieved, actual penetration (R) and total test drive blows are reported.
4. Tests carried out using a split spoon sampler unless noted as SPT(c) (denotes use of solid cone method) in the comments column.
5. Entries in the water depth column reflects the measured water depth at time of test.
6. Results marked with * indicate an extrapolated reading from tests not achieving the full 450mm penetration

N_{60} = (Measured hammer energy ratio / 60) x N value

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Contract: **A635 Barnsley Bus RapidTransit Route**			Page: **2** of **10**

STANDARD PENETRATION TEST SUMMARY TABLE

Exploratory Position ID	Depth (m)	Hole Dia (mm)	Casing Depth (m)	Water Depth (m)	Seating Drive		Test Drive			Hammer ID	Calibration Date	Energy Ratio (%)	N_{60}	Comments
					Blows	Pen (mm)	Blows	R (mm)	Result					
BH10	7.50	200	6.00	Dry	3,4	150	4,4,5,5		N=18	AR1862-2024	15/02/2024	70	21	
	9.00	200	6.00	Dry	8,12	150	50+	60	8,12/50	AR1862-2024	15/02/2024	70		
									for 60mm					
	10.50	200	6.00	Dry	25	70	30,20+	110	25/30,20	AR1862-2024	15/02/2024	70		
									for 35mm					
BH11	1.50	200	1.50	Dry	2,1	150	1,2,2,2		N=7	AR1862-2024	15/02/2024	70	8	
	2.50	200	2.50	Dry	3,3	150	3,3,4,4		N=14	AR1862-2024	15/02/2024	70	16	
	3.50	200	3.00	Dry	2,2	150	3,2,3,4		N=12	AR1862-2024	15/02/2024	70	14	
	4.50	200	4.50	Dry	2,2	150	3,3,4,5		N=15	AR1862-2024	15/02/2024	70	18	
	6.00	200	6.00	Dry	2,3	150	3,3,5,5		N=16	AR1862-2024	15/02/2024	70	19	
	7.50	200	6.00	Dry	7,4	150	4,4,3,6		N=17	AR1862-2024	15/02/2024	70	20	
	9.00	200	6.00	Dry	7,9	150	10,20,20+	200	7,9/10,20,20	AR1862-2024	15/02/2024	70		
									for 50mm					
	10.50	150	6.00	Dry	25	75	50	75	25/50	AR1862-2024	15/02/2024	70		
									for 75mm					
BH12	1.20			Dry	1,0	150	1,0,1,2		N=4	AR1626-2024	16/04/2024	65	4	
	2.20			Dry	2,2	150	2,2,2,3		N=9	AR1626-2024	16/04/2024	65	10	

Notes:
1. **Tests carried out in general accordance with BS EN ISO 22476-3:2005+A1:2011.**
2. **Reported blows are for 75mm penetration unless indicated "+".**
3. **Where full test drive was not achieved, actual penetration (R) and total test drive blows are reported.**
4. **Tests carried out using a split spoon sampler unless noted as SPT(c) (denotes use of solid cone method) in the comments column.**
5. **Entries in the water depth column reflects the measured water depth at time of test.**
6. **Results marked with * indicate an extrapolated reading from tests not achieving the full 450mm penetration**

N_{60} = (Measured hammer energy ratio / 60) x N value

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Compiled By	Date	Contract Ref:
MGALAN	11.12.24	765865

Contract: **A635 Barnsley Bus RapidTransit Route**

STANDARD PENETRATION TEST SUMMARY TABLE

Exploratory Position ID	Depth (m)	Hole Dia (mm)	Casing Depth (m)	Water Depth (m)	Seating Drive		Test Drive			Hammer ID	Calibration Date	Energy Ratio (%)	N_{60}	Comments
					Blows	Pen (mm)	Blows	R (mm)	Result					
BH13	1.20			Dry	1,1	150	1,2,2,2		N=7	AR3874-2024	22/07/2024	65	8	
	2.20			Dry	3,8	150	12,17,18,3+	234	3,8/12,17,18,3	AR3874-2024	22/07/2024	65		
									for 9mm					
BH14	1.20			Dry	5,4	150	3,4,4,4		N=15	AR1626-2024	16/04/2024	65	16	
	2.20			Dry	8,14	150	29,21+	99	8,14/29,21	AR1626-2024	16/04/2024	65		
									for 24mm					
BH15	1.20			Dry	3,2	150	2,2,2,2		N=8	AR3874-2024	22/07/2024	65	9	
	3.00		3.00	Dry	1,1	150	1,1,1,1		N=4	AR3874-2024	22/07/2024	65	4	
	4.50		4.50	Dry	1,1	150	1,2,1,1		N=5	AR3874-2024	22/07/2024	65	5	
	6.00		6.00	Dry	8,9	150	7,7,8,8		N=30	AR3874-2024	22/07/2024	65	32	
	7.50		7.50	Dry	12,13	99	31,19+	93	12,13/31,19	AR3874-2024	22/07/2024	65		
									for 18mm					
BH16	1.20			Dry	2,1	150	1,2,1,1		N=5	AR3874-2024	22/07/2024	65	5	
	3.00		3.00	1.00	1,1	150	1,1,1,1		N=4	AR3874-2024	22/07/2024	65	4	
	4.50		4.50	1.00	1,1	150	1,4,7,11		N=23	AR3874-2024	22/07/2024	65	25	
	6.00		4.50	1.60	8,10	150	10,10,12,8+	273	8,10/10,10,12,8	AR3874-2024	22/07/2024	65		
									for 48mm					
WS03	1.20		1.00	Dry	5,7	150	9,13,28	225	5,7/9,13,28	DART384-2024	09/07/2024	68		

Notes:
1. **Tests carried out in general accordance with BS EN ISO 22476-3:2005+A1:2011.**
2. **Reported blows are for 75mm penetration unless indicated "+".**
3. **Where full test drive was not achieved, actual penetration (R) and total test drive blows are reported.**
4. **Tests carried out using a split spoon sampler unless noted as SPT(c) (denotes use of solid cone method) in the comments column.**
5. **Entries in the water depth column reflects the measured water depth at time of test.**
6. **Results marked with * indicate an extrapolated reading from tests not achieving the full 450mm penetration**

N_{60} = (Measured hammer energy ratio / 60) x N value

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STANDARD PENETRATION TEST SUMMARY TABLE

Exploratory Position ID	Depth (m)	Hole Dia (mm)	Casing Depth (m)	Water Depth (m)	Seating Drive		Test Drive			Hammer ID	Calibration Date	Energy Ratio (%)	N_{60}	Comments
					Blows	Pen (mm)	Blows	R (mm)	Result					
									for 75mm					
WS05	1.20				1,1	150	1,1,0,1		N=3	110.49-2024	17/05/2024	81	4	
	2.00			Dry	0,0	150	0,0,0,0		N=0	110.49-2024	17/05/2024	81	0	
	3.00			Dry	2,2	150	2,3,3,7		N=15	110.49-2024	17/05/2024	81	20	
	3.80			Dry	16,9	150	50	75	16,9/50	110.49-2024	17/05/2024	81		
									for 75mm					
WS06	1.20				1,1	150	2,3,1,2		N=8	110.49-2024	17/05/2024	81	11	
	2.00				0,0	150	0,1,2,2		N=5	110.49-2024	17/05/2024	81	7	
	3.00				4,3	150	5,5,5,6		N=21	110.49-2024	17/05/2024	81	28	
	4.00				2,2	150	3,3,4,7		N=17	110.49-2024	17/05/2024	81	23	
	4.60				10,15	90	50+	0	NP	110.49-2024	17/05/2024	81		
WS07	1.20			Dry	1,0	150	0,1,1,1		N=3	110.49-2024	17/05/2024	81	4	
	2.00			Dry	1,1	150	2,2,2,4		N=10	110.49-2024	17/05/2024	81	14	
	3.00			Dry	7,7	150	14,23,13+	160	7,7/14,23,13	110.49-2024	17/05/2024	81		
									for 10mm					
WS08	1.20			Dry	0,0	150	0,0,1,1		N=2	110.49-2024	17/05/2024	81	3	
	2.00			1.64	2,3	150	2,2,4,7		N=15	110.49-2024	17/05/2024	81	20	

Notes:
1. Tests carried out in general accordance with BS EN ISO 22476-3:2005+A1:2011.
2. Reported blows are for 75mm penetration unless indicated "+".
3. Where full test drive was not achieved, actual penetration (R) and total test drive blows are reported.
4. Tests carried out using a split spoon sampler unless noted as SPT(c) (denotes use of solid cone method) in the comments column.
5. Entries in the water depth column reflects the measured water depth at time of test.
6. Results marked with * indicate an extrapolated reading from tests not achieving the full 450mm penetration

N_{60} = (Measured hammer energy ratio / 60) x N value

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	MGALAN	**11.12.24**	**765865**
Contract: **A635 Barnsley Bus RapidTransit Route**			Page: **5** of **10**

STANDARD PENETRATION TEST SUMMARY TABLE

Exploratory Position ID	Depth (m)	Hole Dia (mm)	Casing Depth (m)	Water Depth (m)	Seating Drive		Test Drive			Hammer ID	Calibration Date	Energy Ratio (%)	N_{60}	Comments
					Blows	Pen (mm)	Blows	R (mm)	Result					
WS08	2.90			Dry	11,14	150	19,25,6+	155	11,14/19,25,6	110.49-2024	17/05/2024	81		
									for 5mm					
WS09	1.20			Dry	1,5	150	3,2,3,2		N=10	110.49-2024	17/05/2024	81	14	
	2.00			Dry	1,1	150	2,2,3,2		N=9	110.49-2024	17/05/2024	81	12	
	3.00			Dry	2,2	150	2,4,4,5		N=15	110.49-2024	17/05/2024	81	20	
	3.90			Dry	50	75	16,30	150	50/16,30	110.49-2024	17/05/2024	81		
									for 75mm					
WS10	1.20			Dry	3,2	150	1,2,2,2		N=7	110.49-2024	17/05/2024	81	9	
	2.00			Dry	2,3	150	3,3,4,5		N=15	110.49-2024	17/05/2024	81	20	
	3.00			Dry	11,14	150	31,19+	95	11,14/31,19	110.49-2024	17/05/2024	81		
									for 20mm					
WS13	1.20				1,1	150	1,2,2,2		N=7	110.49-2024	17/05/2024	81	9	
	2.00				2,3	150	4,4,6,8		N=22	110.49-2024	17/05/2024	81	30	
	3.00				6,14	150	13,19,18+	180	6,14/13,19,18	110.49-2024	17/05/2024	81		
									for 30mm					
WS15	1.20			Dry	4,5	150	5,11,11,12		N=39	DART384-2024	09/07/2024	68	44	
	1.70			Dry	8,17	125	35,15+	85	8,17/35,15	DART384-2024	09/07/2024	68		
									for 10mm					

Notes:
1. Tests carried out in general accordance with BS EN ISO 22476-3:2005+A1:2011.
2. Reported blows are for 75mm penetration unless indicated "+".
3. Where full test drive was not achieved, actual penetration (R) and total test drive blows are reported.
4. Tests carried out using a split spoon sampler unless noted as SPT(c) (denotes use of solid cone method) in the comments column.
5. Entries in the water depth column reflects the measured water depth at time of test.
6. Results marked with * indicate an extrapolated reading from tests not achieving the full 450mm penetration

N_{60} = (Measured hammer energy ratio / 60) x N value

STRUCTURAL SOILS
The Potteries
Pottery Street
Castleford
W. Yorkshire WF10 1NJ

Compiled By		Date	Contract Ref:
	MGALAN	**11.12.24**	**765865**
Contract: **A635 Barnsley Bus RapidTransit Route**			Page: **6** of **10**

STANDARD PENETRATION TEST SUMMARY TABLE

Exploratory Position ID	Depth (m)	Hole Dia (mm)	Casing Depth (m)	Water Depth (m)	Seating Drive		Test Drive			Hammer ID	Calibration Date	Energy Ratio (%)	N_{60}	Comments
					Blows	Pen (mm)	Blows	R (mm)	Result					
WS16	1.20			Dry	2,2	150	2,3,4,4		N=13	DART384-2024	09/07/2024	68	15	
	1.80		1.80	Dry	10,14	150	23,27	150	10,14/23,27	DART384-2024	09/07/2024	68		
									for 75mm					
WS17	1.20			Dry	2,1	150	3,3,3,3		N=12	110.49-2024	17/05/2024	81	16	
	2.00			Dry	3,3	150	4,3,4,4		N=15	110.49-2024	17/05/2024	81	20	
	3.00			Dry	4,5	150	5,6,10,12		N=33	110.49-2024	17/05/2024	81	45	
	3.70			Dry	13,10	150	27,23+	105	13,10/27,23	110.49-2024	17/05/2024	81		
									for 30mm					
WS19	1.20			Dry	1,2	150	2,1,2,2		N=7	110.49-2024	17/05/2024	81	9	
	2.00			Dry	1,1	150	1,1,1,4		N=7	110.49-2024	17/05/2024	81	9	
	3.00			Dry	2,2	150	2,3,5,5		N=15	110.49-2024	17/05/2024	81	20	
	4.00			Dry	4,5	150	7,7,9,11		N=34	110.49-2024	17/05/2024	81	46	
	5.00			Dry	5,5	150	5,7,7,9		N=28	110.49-2024	17/05/2024	81	38	
WS20	1.20			Dry	2,2	150	3,4,4,5		N=16	DART384-2024	09/07/2024	68	18	
	2.00			Dry	8,16	150	50	75	8,16/50	DART384-2024	09/07/2024	68		
									for 75mm					
WS22	1.20			Dry	1,3	150	4,7,8,11		N=30	110.49-2024	17/05/2024	81	40	

Notes:
1. **Tests carried out in general accordance with BS EN ISO 22476-3:2005+A1:2011.**
2. **Reported blows are for 75mm penetration unless indicated "+".**
3. **Where full test drive was not achieved, actual penetration (R) and total test drive blows are reported.**
4. **Tests carried out using a split spoon sampler unless noted as SPT(c) (denotes use of solid cone method) in the comments column.**
5. **Entries in the water depth column reflects the measured water depth at time of test.**
6. **Results marked with * indicate an extrapolated reading from tests not achieving the full 450mm penetration**

N_{60} = (Measured hammer energy ratio / 60) x N value

STRUCTURAL SOILS
The Potteries
Pottery Street
Castleford
W. Yorkshire WF10 1NJ

Compiled By		Date	Contract Ref:
	MGALAN	**11.12.24**	**765865**
Contract: **A635 Barnsley Bus RapidTransit Route**			Page: **7** of **10**

STANDARD PENETRATION TEST SUMMARY TABLE

Exploratory Position ID	Depth (m)	Hole Dia (mm)	Casing Depth (m)	Water Depth (m)	Seating Drive		Test Drive			Hammer ID	Calibration Date	Energy Ratio (%)	N_{60}	Comments
					Blows	Pen (mm)	Blows	R (mm)	Result					
WS22	1.90			Dry	10,12	150	27,23+	105	10,12/27,23	110.49-2024	17/05/2024	81		
									for 30mm					
WS23	1.20			Dry	2,1	150	0,1,2,4		N=7	110.49-2024	17/05/2024	81	9	
	2.00			Dry	3,4	150	5,6,7,11		N=29	110.49-2024	17/05/2024	81	39	
	2.60			Dry	13,60	150	15,30	150	13,60/15,30	110.49-2024	17/05/2024	81		
									for 75mm					
WS24	1.20			Dry	19,6	80	17,25,8+	150	19,6/17,25,8	110.49-2024	17/05/2024	81		
									for 0mm					
WS26	1.20		1.00	Dry	5,3	150	3,3,44+	200	5,3/3,3,44	DART384-2024	09/07/2024	68		
									for 50mm					
WS27	1.20			Dry	7,6	150	6,8,12,14		N=40	DART384-2024	09/07/2024	68	45	
	1.70			Dry	25,0	150	10	75	25/10	DART384-2024	09/07/2024	68		
									for 75mm					
WS28	1.20			Dry	7,5	150	5,3,3,4		N=15	DART384-2024	09/07/2024	68	17	
	1.65		1.65	Dry	9,13	150	10,14,6,8		N=38	DART384-2024	09/07/2024	68	43	
	2.10		1.65	Dry	8,15	150	50	75	8,15/50	DART384-2024	09/07/2024	68		
									for 75mm					
WS29A	1.20				1,0	150	1,0,1,0		N=2	110.49-2024	17/05/2024	81	3	

Notes:
1. Tests carried out in general accordance with BS EN ISO 22476-3:2005+A1:2011.
2. Reported blows are for 75mm penetration unless indicated "+".
3. Where full test drive was not achieved, actual penetration (R) and total test drive blows are reported.
4. Tests carried out using a split spoon sampler unless noted as SPT(c) (denotes use of solid cone method) in the comments column.
5. Entries in the water depth column reflects the measured water depth at time of test.
6. Results marked with * indicate an extrapolated reading from tests not achieving the full 450mm penetration

N_{60} = (Measured hammer energy ratio / 60) x N value

STRUCTURAL SOILS
The Potteries
Pottery Street
Castleford
W. Yorkshire WF10 1NJ

Compiled By		Date	Contract Ref:
	MGALAN	**11.12.24**	**765865**
Contract: **A635 Barnsley Bus RapidTransit Route**			Page: **8** of **10**

STANDARD PENETRATION TEST SUMMARY TABLE

Exploratory Position ID	Depth (m)	Hole Dia (mm)	Casing Depth (m)	Water Depth (m)	Seating Drive		Test Drive			Hammer ID	Calibration Date	Energy Ratio (%)	N_{60}	Comments
					Blows	Pen (mm)	Blows	R (mm)	Result					
WS29A	2.00				2,2	150	2,2,3,4		N=11	110.49-2024	17/05/2024	81	15	
	3.00				3,4	150	15,15,20+	170	3,4/15,15,20	110.49-2024	17/05/2024	81		
									for 20mm					
WS30	1.20			Dry	1,1	150	1,1,1,1		N=4	110.49-2024	17/05/2024	81	5	
	2.00			Dry	1,1	150	2,2,3,4		N=11	110.49-2024	17/05/2024	81	15	
	3.00			Dry	7,7	150	13,14,14,9		N=50	110.49-2024	17/05/2024	81	68	
WS31	1.20			Dry	1,1	150	1,1,1,2		N=5	110.49-2024	17/05/2024	81	7	
	2.00			Dry	1,2	150	2,4,3,6		N=15	110.49-2024	17/05/2024	81	20	
	3.00			Dry	6,7	150	14,17,19+	190	6,7/14,17,19	110.49-2024	17/05/2024	81		
									for 40mm					
WS32	1.20				1,2	150	1,2,1,2		N=6	110.49-2024	17/05/2024	81	8	
	2.00				4,1	150	6,4,3,3		N=16	110.49-2024	17/05/2024	81	22	
	3.00				2,3	150	6,5,7,8		N=26	110.49-2024	17/05/2024	81	35	
	4.00				11,12	150	12,13,14,11+	245	11,12/12,13,14,11	110.49-2024	17/05/2024	81		
									for 20mm					
WS33	1.20			Dry	1,1	150	1,1,1,1		N=4	110.49-2024	17/05/2024	81	5	
	2.00			Dry	1,1	150	1,2,1,2		N=6	110.49-2024	17/05/2024	81	8	

Notes:
1. Tests carried out in general accordance with BS EN ISO 22476-3:2005+A1:2011.
2. Reported blows are for 75mm penetration unless indicated "+".
3. Where full test drive was not achieved, actual penetration (R) and total test drive blows are reported.
4. Tests carried out using a split spoon sampler unless noted as SPT(c) (denotes use of solid cone method) in the comments column.
5. Entries in the water depth column reflects the measured water depth at time of test.
6. Results marked with * indicate an extrapolated reading from tests not achieving the full 450mm penetration

N_{60} = (Measured hammer energy ratio / 60) x N value

STRUCTURAL SOILS
The Potteries
Pottery Street
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W. Yorkshire WF10 1NJ

Compiled By		Date	Contract Ref:
	MGALAN	**11.12.24**	**765865**
Contract: **A635 Barnsley Bus RapidTransit Route**			Page: **9** of **10**

STANDARD PENETRATION TEST SUMMARY TABLE

Exploratory Position ID	Depth (m)	Hole Dia (mm)	Casing Depth (m)	Water Depth (m)	Seating Drive		Test Drive			Hammer ID	Calibration Date	Energy Ratio (%)	N_{60}	Comments
					Blows	Pen (mm)	Blows	R (mm)	Result					
WS33	3.00			Dry	2,2	150	1,2,2,3		N=8	110.49-2024	17/05/2024	81	11	
	4.00			Dry	10,13	150	29,10	150	10,13/29,10	110.49-2024	17/05/2024	81		
									for 75mm					
WS34	1.20				4,5	150	2,3,2,2		N=9	110.49-2024	17/05/2024	81	12	
	2.00				2,3	150	3,2,7,3		N=15	110.49-2024	17/05/2024	81	20	

Notes:
1. **Tests carried out in general accordance with BS EN ISO 22476-3:2005+A1:2011.**
2. **Reported blows are for 75mm penetration unless indicated "+".**
3. **Where full test drive was not achieved, actual penetration (R) and total test drive blows are reported.**
4. **Tests carried out using a split spoon sampler unless noted as SPT(c) (denotes use of solid cone method) in the comments column.**
5. **Entries in the water depth column reflects the measured water depth at time of test.**
6. **Results marked with * indicate an extrapolated reading from tests not achieving the full 450mm penetration**

N_{60} = (Measured hammer energy ratio / 60) x N value

STRUCTURAL SOILS
The Potteries
Pottery Street
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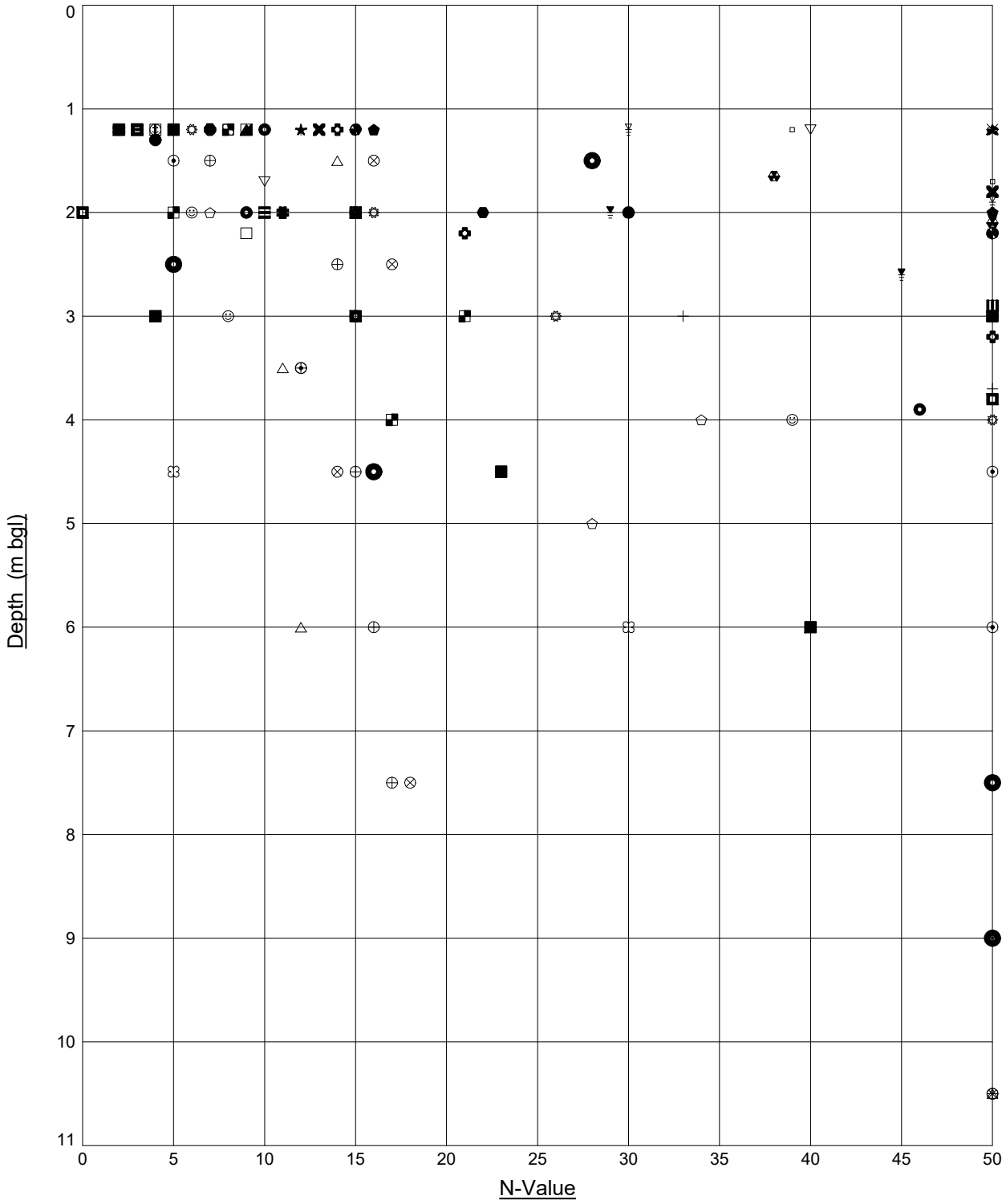
W. Yorkshire WF10 1NJ

Compiled By	Date	Contract Ref:
MGALAN	**11.12.24**	**765865**

Contract: **A635 Barnsley Bus RapidTransit Route**

STANDARD PENETRATION TEST (SPT N-Value) vs DEPTH

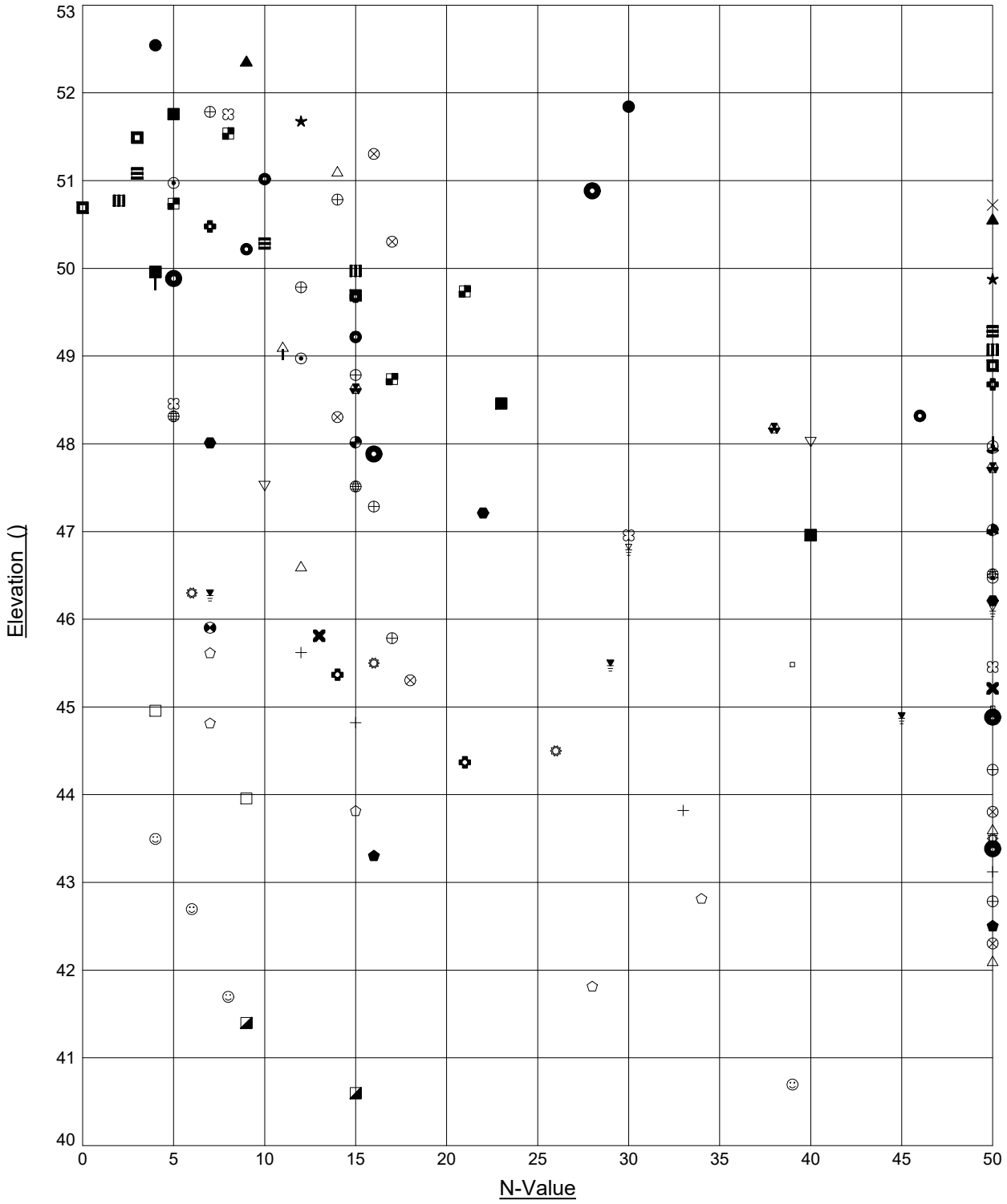


Key: ● = BH01, ▲ = BH02, ★ = BH03, ⊙ = BH06, ✿ = BH07, ◉ = BH08, △ = BH09, ⊗ = BH10, ⊕ = BH11, □ = BH12, ⊠ = BH13, ◔ = BH14, ⊠ = BH15, ■ = BH16, ✕ = WS03, ◘ = WS05, ◪ = WS06, 〓 = WS07, ▮▮ = WS08, ✪ = WS09, ✤ = WS10, ⬢ = WS13, ▫ = WS15, ✖ = WS16, ┼ = WS17, ⬠ = WS19, ⬟ = WS20, ⍒ = WS22, ⍒ = WS23, ◓ = WS24, ⅄ = WS26, ▽ = WS27, ❖ = WS28, ✱ = WS29A, ❙ = WS30, ◍ = WS31, ☼ = WS32, ☺ = WS33, ◪ = WS34

STRUCTURAL SOILS The Potteries Pottery Street Castleford W. Yorkshire WF10 1NJ	Contract **A635 Barnsley Bus RapidTransit Route**	Date **21.10.24**	Compiled By AG
	Client **Barnsley Metropolitan Borough council**	Contract Ref: **765865**	AGS

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph G - PLOTS - SITE - GENERAL - A4P | 765865_A635_BARNSLEY_BUS_RAPIDTRANSIT_ROUTE.GPJ - v10_01. | 21/10/24 - 13:10 | MG1 |

STANDARD PENETRATION TEST (SPT N-Value) vs ELEVATION



Key: ● = BH01, ▲ = BH02, ★ = BH03, ⊙ = BH06, ✿ = BH07, ◉ = BH08, △ = BH09, ⊗ = BH10, ⊕ = BH11, □ = BH12, ✽ = BH13, ◔ = BH14, ⊠ = BH15, ■ = BH16, ⨯ = WS03, ◘ = WS05, ◪ = WS06, 〓 = WS07, ▥ = WS08, ⭘ = WS09, ✤ = WS10, ⬢ = WS13, ▫ = WS15, ✖ = WS16, ⟊ = WS17, ⬠ = WS19, ⬟ = WS20, ⧖ = WS22, ⧗ = WS23, ◓ = WS24, ⅄ = WS26, ▽ = WS27, ☘ = WS28, ❙ = WS30, ◍ = WS31, ☼ = WS32, ☺ = WS33, ◪ = WS34

STRUCTURAL SOILS The Potteries Pottery Street Castleford W. Yorkshire WF10 1NJ	Contract **A635 Barnsley Bus RapidTransit Route**	Date **21.10.24**	Compiled By **M6**
	Client **Barnsley Metropolitan Borough council**	Contract Ref: **765865**	AGS

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph G - PLOTS - SITE - GENERAL - A4P | 765865_A635_BARNSLEY_BUS_RAPIDTRANSIT_ROUTE.GPJ - v10_01. | 21/10/24 - 13:11 | MG1 |

APPENDIX D - GEOTECHNICAL LABORATORY TESTING

(i) Laboratory verification Sheet

(ii) Test Results

TESTING VERIFICATION CERTIFICATE

1774

The test results included in this report are certified as:-

ISSUE STATUS: **FINAL**

In accordance with the Structural Soils Ltd Laboratory Quality Management System, results sheets and summaries of results issued by the laboratory are checked by an approved signatory. The integrity of the test data and results are ensured by control of the computer system employed by the laboratory as part of the Software Verification Program as detailed in the Laboratory Quality Manual.

This testing verification certificate covers all testing compiled on or before the following datetime: **22/11/2024 08:33:21**.

Testing reported after this date is not covered by this Verification Certificate.

Approved Signatory
Luke Fisher (Principal Laboratory Manager - Castleford)

(Head Office)
Bristol Laboratory
Unit 1A, Princess Street
Bedminster
Bristol
BS3 4AG

Castleford Laboratory
The Potteries, Pottery Street
Castleford
West Yorkshire
WF10 1NJ

Hemel Laboratory
18 Frogmore Road
Hemel Hempstead
Hertfordshire
HP3 9RT

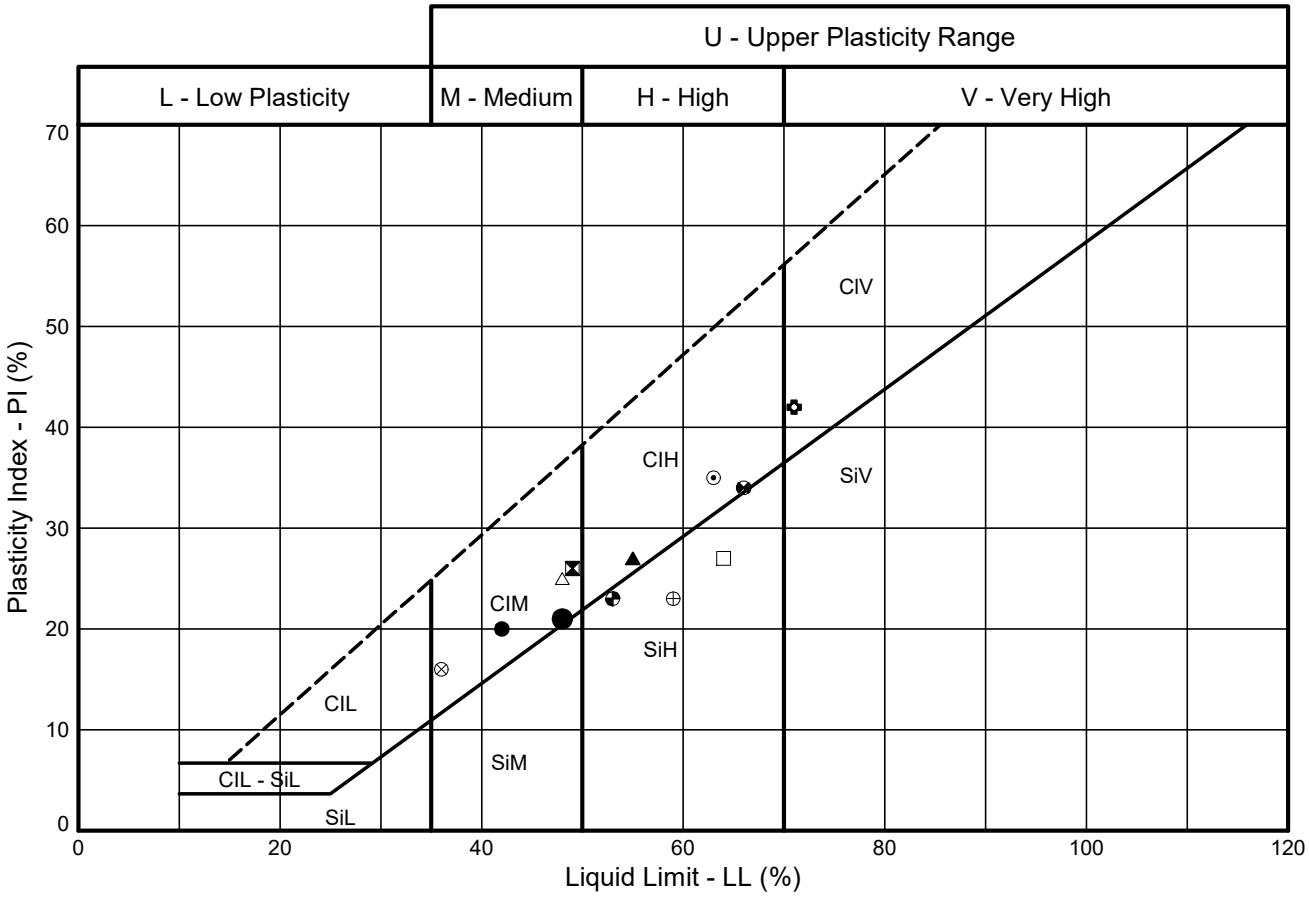
Tunbridge Wells Laboratory
Bridge House, North Farm Road
Tunbridge Wells
Kent
TN2 3DR

STRUCTURAL SOILS LTD	Contract: **A635 Barnsley Bus RapidTransit Route**	Job No: **765865**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | GrfcText L - LAB VERIFICATION REPORT - V02 - A4P | 765865_A635_BARNSLEY_BUS_RAPIDTRANSIT_ROUTE.GPJ - v10_01
Structural Soils Ltd, Branch Office - Castleford: The Potteries, Pottery Street, Castleford, West Yorkshire, WF10 1NJ. Tel: 01977-552255, Fax: 01977-552299, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 22/11/24 - 08:34 | LF1 |

PI vs LL CHART

According to BS EN 14688-2:2018
Testing in accordance with BS EN ISO 17892-12:2018+A2:2022



Sample Identification				Test Method #	Preparation Method +	WC %	LL %	PL %	PI %	<425µm %	Lab location	Notes
	Exploratory Position ID	Sample	Depth (m)									
●	BH01	4D	1.00	5.3/5.5/6.5	5.2.7	19.2	42	22	20	51	C	I
⊠	BH01	7D	2.40	5.3/5.5/6.5	5.2.7	16.2	49	23	26	64	C	I
▲	BH02	4D	1.00	5.3/5.5/6.5	5.2.7	27.1	55	28	27	74	C	I
★	BH02	8D	1.70	5.3/5.5/6.5	5.2.7	20.1	48	27	21	60	C	I
⊙	BH03	7D	2.20	5.3/5.5/6.5	5.2.7	23.4	63	28	35	60	C	I
✿	BH06	10D	2.00	5.3/5.5/6.5	5.2.7	40.0	71	29	42	90	C	I
◉	BH06	12D	2.95	5.3/5.5/6.5	5.2.7	27.2	48	27	21	92	C	I
△	BH06	16D	4.00	5.3/5.5/6.5	5.2.7	25.8	48	23	25	78	C	I
⊗	BH06	21D	5.00	5.3/5.5/6.5	5.2.7	8.7	36	20	16	64	C	I
⊕	BH07	1D	0.10	5.3/5.5/6.5	5.2.7	10.7	59	36	23	65	C	I
□	BH07	3D	1.00	5.3/5.5/6.5	5.2.7	24.1	64	37	27	80	C	I
⊗	BH07	11D	1.40	5.3.14/5.5/6.5	5.2.7	15.6	66	32	34	58	C	
◕	BH07	13D	2.30	5.3/5.5/6.5	5.2.7	21.7	53	30	23	55	C	I

Tested in accordance with the following clauses of BS EN ISO 17892-12:2018+A2:2022
5.3 - Cone Penetrometer Method; 5.3.14 - One-Point Cone Penetrometer Method (factors are from Table 1, BS 1377-2:2022);
5.4 - Casagrande Method; 5.5 - Plastic Limit Method; 6.5 - Plasticity Index
Water Content (WC) tested in accordance with BS EN ISO 17892-1:2014+A1:2022
+ Tested in accordance with the following clauses of BS EN ISO 17892-12:2018+A2:2022
5.2.1 - Natural State and 5.2.7 - Wet Sieved

Key: * = Non-standard test, NP = Non plastic, I = Increasing WC, D = Decreasing WC.

Lab location: B = Bristol (BS3 4AG), C = Castleford (WF10 1NJ), H = Hemel Hempstead (HP3 9RT), T = Tunbridge (TN2 3DR)

STRUCTURAL SOILS
The Potteries
Pottery Street
Castleford
W. Yorkshire WF10 1NJ

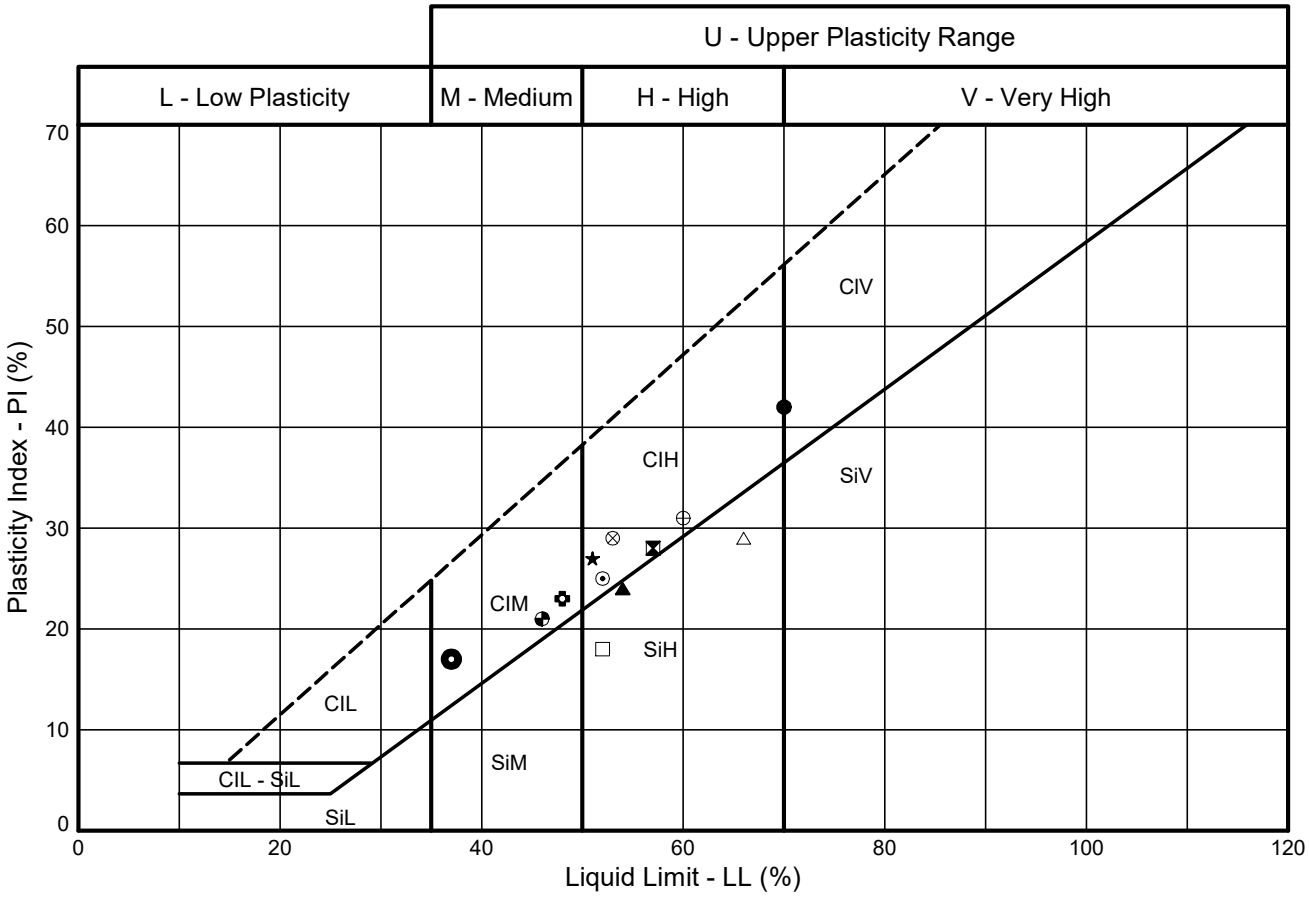
Compiled By		Date
Francesca Bennett	FRANCESCA BENNETT	10/12/24

Contract	Contract Ref:
A635 Barnsley Bus RapidTransit Route	**765865**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - ALINE STANDARD - 17892 - A4P | 765865_A635_BARNSLEY_BUS_RAPIDTRANSIT_ROUTE.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Castleford: The Potteries, Pottery Street, Castleford, West Yorkshire, WF10 1NJ. Tel: 01977-552255, Fax: 01977-552299, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 10/12/24 - 14:51 | FB1 |

PI vs LL CHART

According to BS EN 14688-2:2018
Testing in accordance with BS EN ISO 17892-12:2018+A2:2022



Sample Identification				Test Method #	Preparation Method +	WC %	LL %	PL %	PI %	<425µm %	Lab location	Notes
	Exploratory Position ID	Sample	Depth (m)									
●	BH08	12D	3.00	5.3/5.5/6.5	5.2.7	31.1	70	28	42	100	C	I
⊠	BH08	14D	3.95	5.3/5.5/6.5	5.2.7	33.8	57	29	28	91	C	I
▲	BH08	18D	5.00	5.3/5.5/6.5	5.2.7	29.9	54	30	24	85	C	I
★	BH08	21D	6.45	5.3/5.5/6.5	5.2.7	23.0	51	24	27	51	C	I
⊙	BH08	22D	7.00	5.3/5.5/6.5	5.2.7	25.6	52	27	25	57	C	I
✿	BH08	27D	8.00	5.3/5.5/6.5	5.2.7	17.2	48	25	23	85	C	I
◉	BH09	10D	2.40	5.3/5.5/6.5	5.2.7	16.5	37	20	17	55	C	I
△	BH09	19D	4.95	5.3/5.5/6.5	5.2.7	30.3	66	37	29	91	C	I
⊗	BH09	25D	7.00	5.3/5.5/6.5	5.2.7	21.0	53	24	29	49	C	I
⊕	BH09	28D	7.95	5.3/5.5/6.5	5.2.7	26.7	60	29	31	69	C	I
□	BH09	30D	8.50	5.3/5.5/6.5	5.2.7	22.2	52	34	18	62	C	I
	BH10	8D	2.00	5.3/5.5/6.5	5.2.7	11.0	NP	NP	NP	61	C	
◕	BH10	16D	3.95	5.3/5.5/6.5	5.2.7	26.6	46	25	21	79	C	I

Tested in accordance with the following clauses of BS EN ISO 17892-12:2018+A2:2022
5.3 - Cone Penetrometer Method; 5.3.14 - One-Point Cone Penetrometer Method (factors are from Table 1, BS 1377-2:2022);
5.4 - Casagrande Method; 5.5 - Plastic Limit Method; 6.5 - Plasticity Index
Water Content (WC) tested in accordance with BS EN ISO 17892-1:2014+A1:2022
+ Tested in accordance with the following clauses of BS EN ISO 17892-12:2018+A2:2022
5.2.1 - Natural State and 5.2.7 - Wet Sieved

Key: * = Non-standard test, NP = Non plastic, I = Increasing WC, D = Decreasing WC.

Lab location: B = Bristol (BS3 4AG), C = Castleford (WF10 1NJ), H = Hemel Hempstead (HP3 9RT), T = Tunbridge (TN2 3DR)

STRUCTURAL SOILS
The Potteries
Pottery Street
Castleford
W. Yorkshire WF10 1NJ

Compiled By		Date
Francesca Bennett	FRANCESCA BENNETT	10/12/24

Contract	Contract Ref:
A635 Barnsley Bus RapidTransit Route	**765865**

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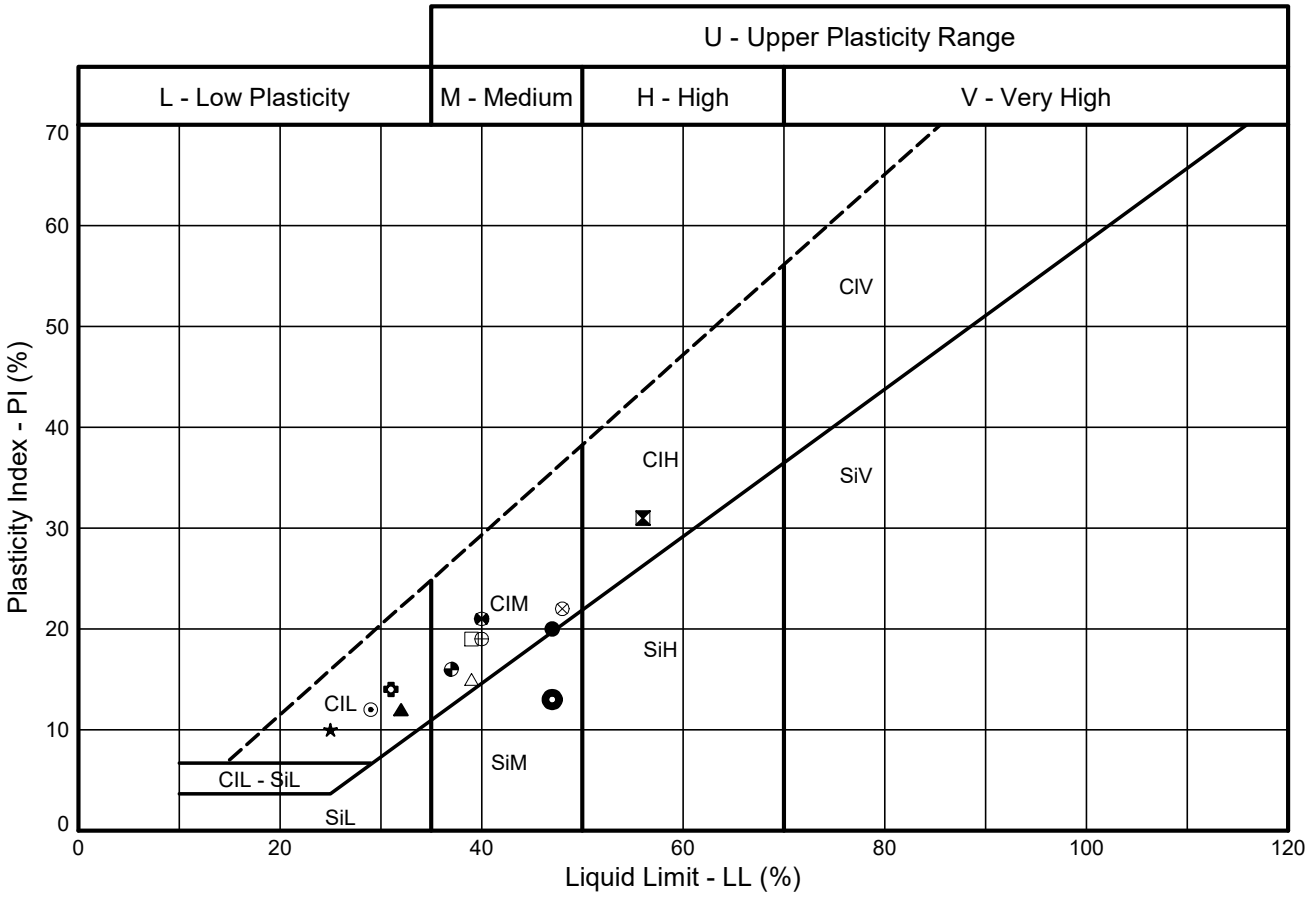
PI vs LL CHART

According to BS EN 14688-2:2018
Testing in accordance with BS EN ISO 17892-12:2018+A2:2022



Sample Identification				Test Method #	Preparation Method +	WC	LL	PL	PI	<425µm	Lab location	Notes
	Exploratory Position ID	Sample	Depth (m)			%	%	%	%	%		
●	BH10	21D	5.50	5.3/5.5/6.5	5.2.7	26.6	47	27	20	88	C	I
⊠	BH10	23D	6.45	5.3/5.5/6.5	5.2.7	25.0	56	25	31	91	C	I
▲	BH11	9D	2.00	5.3/5.5/6.5	5.2.7	14.9	32	20	12	57	C	I
★	BH11	27D	7.00	5.3/5.5/6.5	5.2.7	13.8	25	15	10	49	C	I
⊙	BH11	32D	8.50	5.3/5.5/6.5	5.2.7	15.0	29	17	12	53	C	I
✿	BH11	37D	9.50	5.3/5.5/6.5	5.2.7	11.5	31	17	14	71	C	I
◉	BH12	4D	1.00	5.3/5.5/6.5	5.2.7	24.0	47	34	13	45	C	I
△	BH13	5D	1.10	5.3/5.5/6.5	5.2.7	19.0	39	24	15	65	C	I
⊗	BH13	7D	1.45	5.3/5.5/6.5	5.2.7	29.8	48	26	22	82	C	I
⊕	BH14	8D	2.00	5.3/5.5/6.5	5.2.7	11.2	40	21	19	72	C	I
□	BH14A	3D	0.50	5.3/5.5/6.5	5.2.1	9.3	39	20	19	53	C	I
⊛	BH15	204DSPT	3.00	5.3/5.5/6.5	5.2.7	17.6	40	19	21	85	C	I
◕	BH15	11D	5.00	5.3/5.5/6.5	5.2.7	23.6	37	21	16	68	C	I

Tested in accordance with the following clauses of BS EN ISO 17892-12:2018+A2:2022
5.3 - Cone Penetrometer Method; 5.3.14 - One-Point Cone Penetrometer Method (factors are from Table 1, BS 1377-2:2022);
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5.2.1 - Natural State and 5.2.7 - Wet Sieved

Key: * = Non-standard test, NP = Non plastic, I = Increasing WC, D = Decreasing WC.

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Francesca Bennett	FRANCESCA BENNETT	10/12/24

Contract	Contract Ref:
A635 Barnsley Bus RapidTransit Route	**765865**

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PI vs LL CHART

According to BS EN 14688-2:2018
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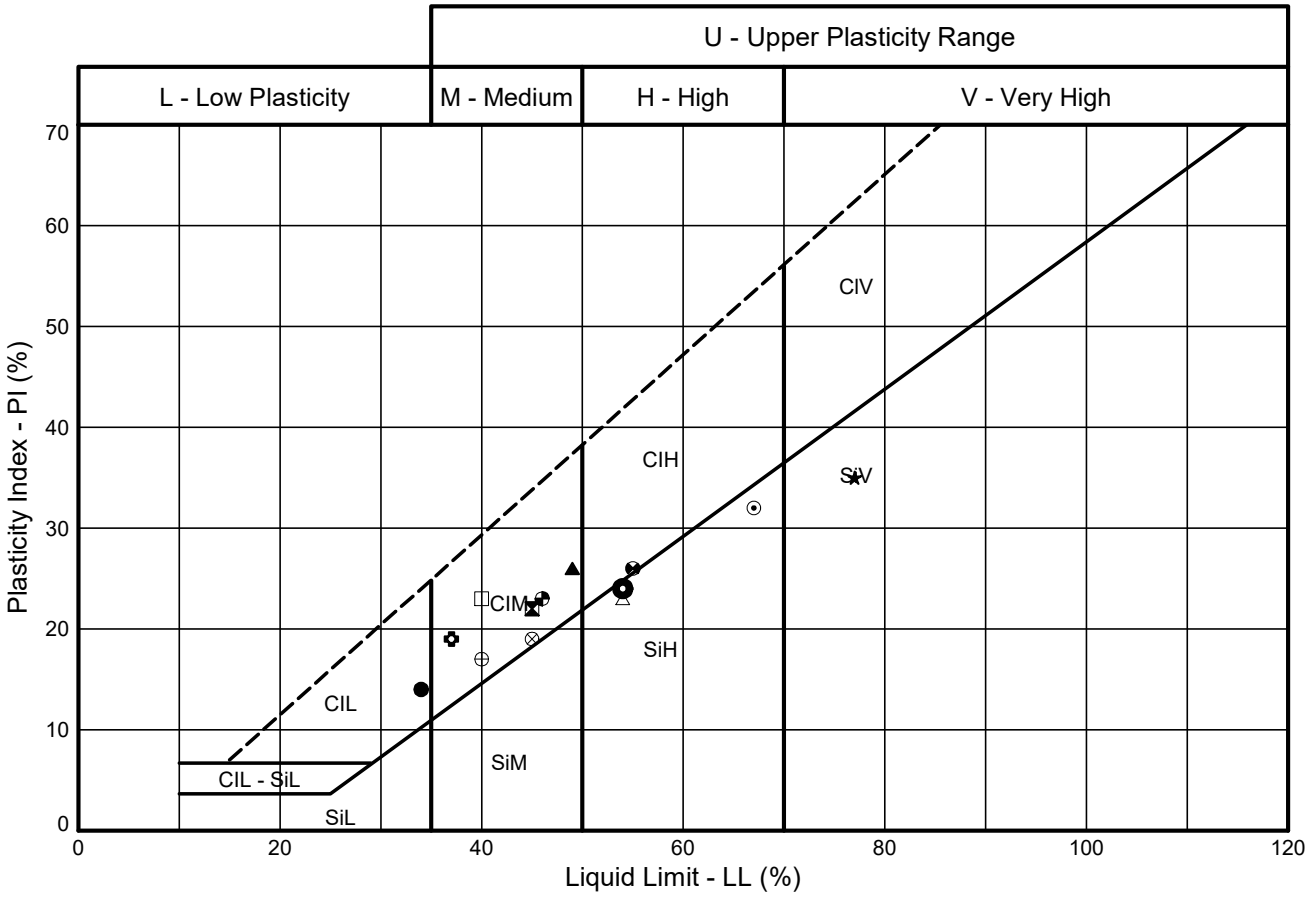

Sample Identification				Test Method #	Preparation Method +	WC	LL	PL	PI	<425µm	Lab location	Notes
	Exploratory Position ID	Sample	Depth (m)			%	%	%	%	%		
●	BH15	13D	6.90	5.3/5.5/6.5	5.2.7	16.8	34	20	14	77	C	I
⊠	BH16	4D	1.00	5.3/5.5/6.5	5.2.7	23.8	45	23	22	62	C	I
▲	BH16	6D	2.90	5.3/5.5/6.5	5.2.7	24.8	49	23	26	69	C	I
★	BH16	7D	3.55	5.3/5.5/6.5	5.2.7	46.6	77	42	35	88	C	I
⊙	BH16	8D	4.20	5.3/5.5/6.5	5.2.7	48.7	67	35	32	93	C	I
✿	BH16	9D	5.20	5.3/5.5/6.5	5.2.7	18.4	37	18	19	80	C	I
◉	WS02	3D	0.50	5.3/5.5/6.5	5.2.7	14.7	54	30	24	36	C	I
△	WS03	5DSPT	1.20	5.3/5.5/6.5	5.2.7	13.1	54	31	23	49	C	I
⊗	WS05	7D	1.70	5.3/5.5/6.5	5.2.7	25.7	45	26	19	69	C	I
⊕	WS05	11DSPT	3.00	5.3/5.5/6.5	5.2.7	13.7	40	23	17	87	C	I
□	WS06	9D	2.00	5.3/5.5/6.5	5.2.7	23.8	40	17	23	96	C	I
⊠	WS07	5D	1.80	5.3/5.5/6.5	5.2.7	28.4	55	29	26	100	C	I
◕	WS08	6D	1.10	5.3/5.5/6.5	5.2.7	27.1	46	23	23	76	C	I

Tested in accordance with the following clauses of BS EN ISO 17892-12:2018+A2:2022
5.3 - Cone Penetrometer Method; 5.3.14 - One-Point Cone Penetrometer Method (factors are from Table 1, BS 1377-2:2022);
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5.2.1 - Natural State and 5.2.7 - Wet Sieved

Key: * = Non-standard test, NP = Non plastic, I = Increasing WC, D = Decreasing WC.

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Francesca Bennett	FRANCESCA BENNETT	10/12/24

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A635 Barnsley Bus RapidTransit Route	**765865**

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PI vs LL CHART

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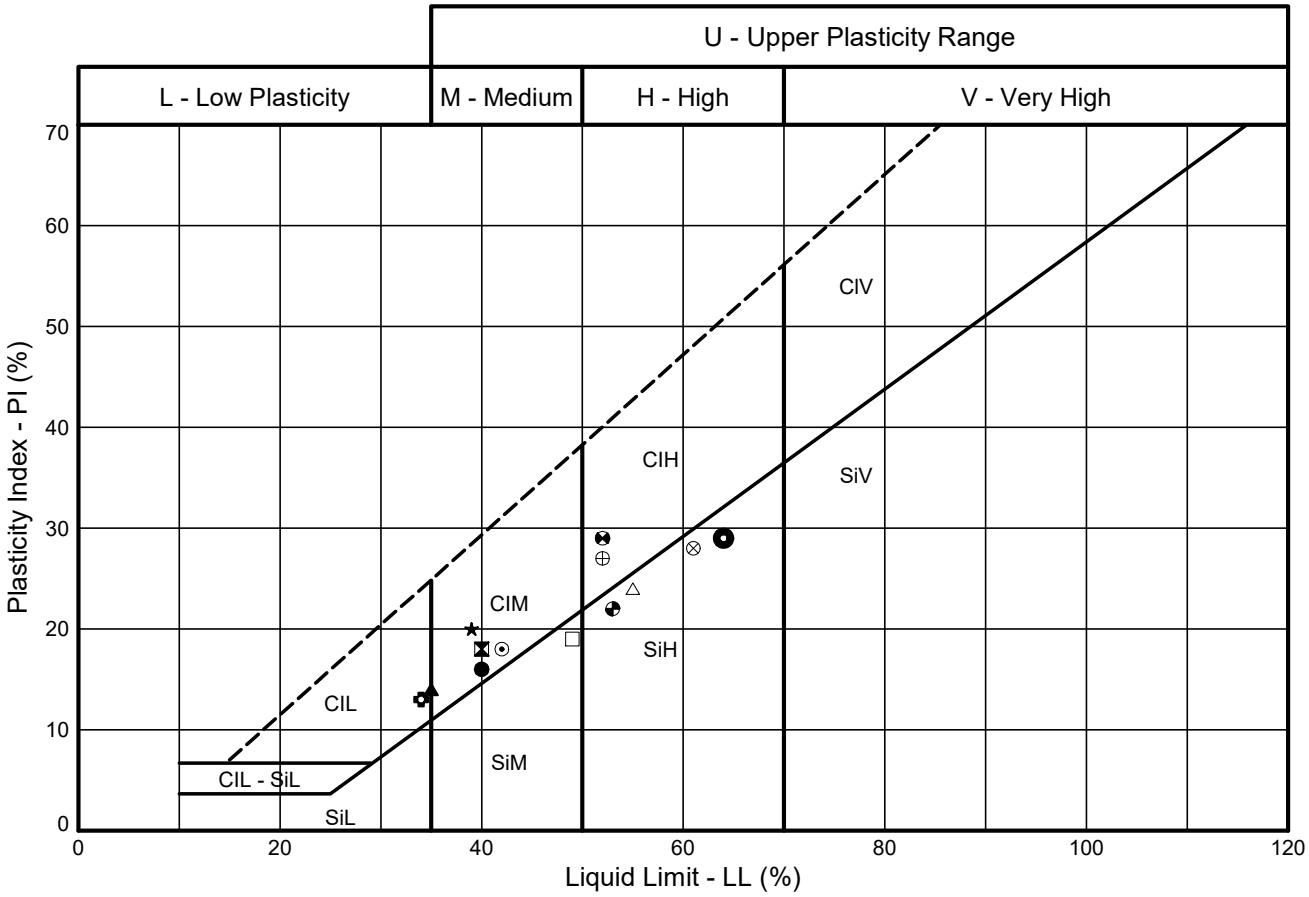

Sample Identification				Test Method #	Preparation Method +	WC	LL	PL	PI	<425µm	Lab location	Notes
	Exploratory Position ID	Sample	Depth (m)			%	%	%	%	%		
●	WS08	14DSPT	2.90	5.3/5.5/6.5	5.2.7	15.0	40	24	16	72	C	I
⊠	WS09	6D	1.70	5.3/5.5/6.5	5.2.7	31.2	40	22	18	84	C	I
▲	WS09	12DSPT	3.00	5.3/5.5/6.5	5.2.7	18.9	35	21	14	73	C	I
★	WS10	6DSPT	1.20	5.3/5.5/6.5	5.2.7	18.6	39	19	20	93	C	I
⊙	WS10	7B	1.40	5.3/5.5/6.5	5.2.7	20.2	42	24	18	88	C	I
✿	WS10	9DSPT	2.00	5.3/5.5/6.5	5.2.7	10.4	34	21	13	71	C	I
◉	WS13	7D	1.90	5.3/5.5/6.5	5.2.7	24.6	64	35	29	35	C	I
△	WS13	9D	2.00	5.3/5.5/6.5	5.2.7	20.9	55	31	24	42	C	I
⊗	WS17	3D	0.85	5.3/5.5/6.5	5.2.7	25.4	61	33	28	86	C	I
⊕	WS17	7D	1.40	5.3/5.5/6.5	5.2.7	19.3	52	25	27	74	C	I
□	WS17	13DSPT	3.00	5.3/5.5/6.5	5.2.7	18.0	49	30	19	60	C	I
⊛	WS19	3D	0.40	5.3/5.5/6.5	5.2.7	16.4	52	23	29	69	C	I
◕	WS19	8D	1.80	5.3/5.5/6.5	5.2.7	22.3	53	31	22	100	C	I

Tested in accordance with the following clauses of BS EN ISO 17892-12:2018+A2:2022
5.3 - Cone Penetrometer Method; 5.3.14 - One-Point Cone Penetrometer Method (factors are from Table 1, BS 1377-2:2022);
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Key: * = Non-standard test, NP = Non plastic, I = Increasing WC, D = Decreasing WC.

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Francesca Bennett	FRANCESCA BENNETT	10/12/24

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A635 Barnsley Bus RapidTransit Route	**765865**

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PI vs LL CHART

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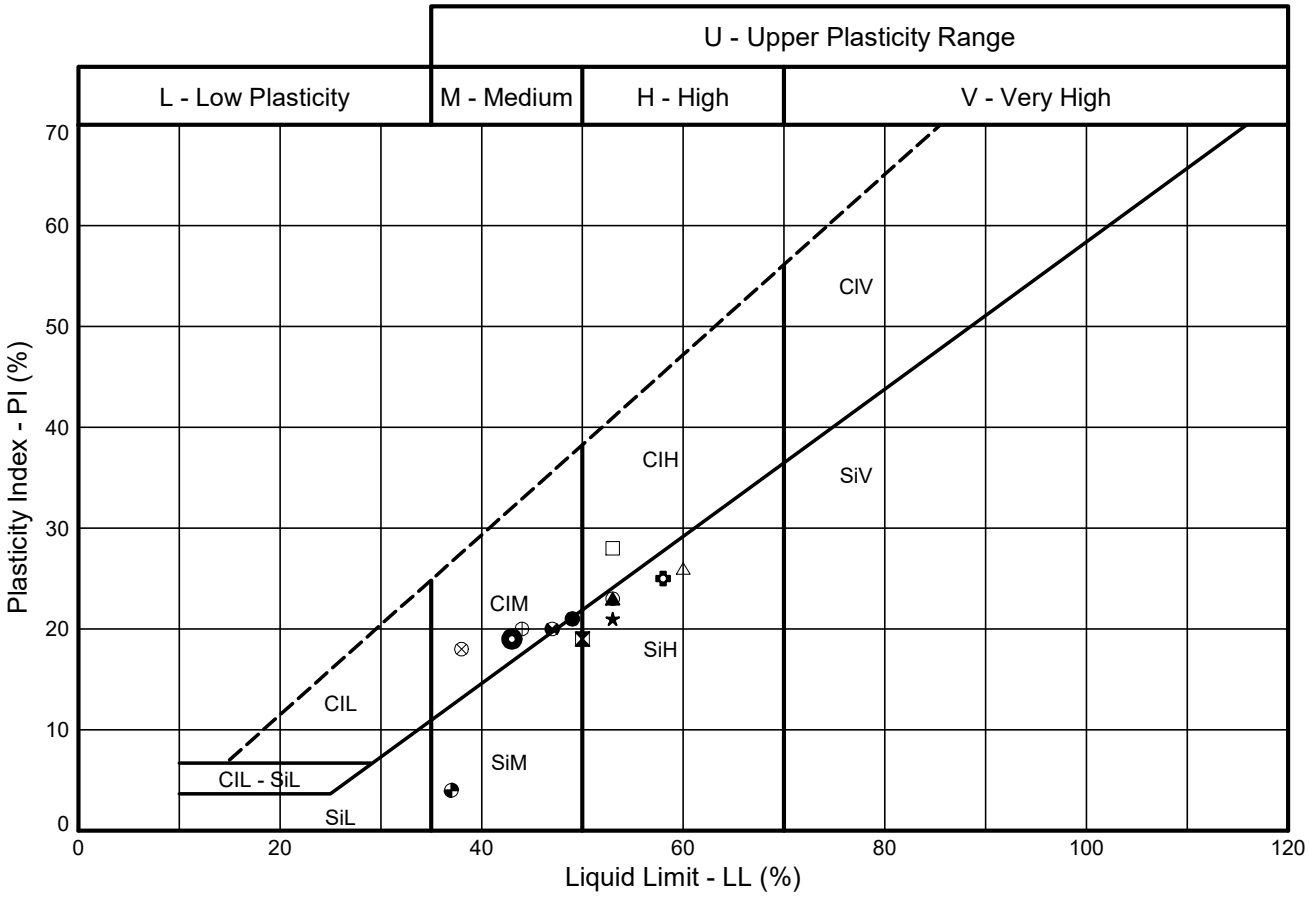

Sample Identification				Test Method #	Preparation Method +	WC	LL	PL	PI	<425µm	Lab location	Notes
	Exploratory Position ID	Sample	Depth (m)			%	%	%	%	%		
●	WS19	13DSPT	3.00	5.3/5.5/6.5	5.2.7	24.3	49	28	21	79	C	I
⊠	WS19	17DSPT	4.00	5.3/5.5/6.5	5.2.7	18.5	50	31	19	55	C	I
▲	WS22	5D	0.80	5.3/5.5/6.5	5.2.7	19.9	53	30	23	81	C	I
★	WS23	1D	0.10	5.3/5.5/6.5	5.2.7	16.2	53	32	21	66	C	I
⊙	WS23	8D	1.20	5.3/5.5/6.5	5.2.7	28.3	53	30	23	89	C	I
✿	WS23	11DSPT	2.00	5.3/5.5/6.5	5.2.7	18.7	58	33	25	59	C	I
◉	WS24	3D	0.40	5.3/5.5/6.5	5.2.7	15.5	43	24	19	74	C	I
△	WS27	6B	1.40	5.3/5.5/6.5	5.2.7	16.3	60	34	26	35	C	I
⊗	WS29A	6D	1.60	5.3/5.5/6.5	5.2.7	16.7	38	20	18	95	C	I
⊕	WS30	6D	1.00	5.3/5.5/6.5	5.2.7	23.0	44	24	20	80	C	I
□	WS30	11D	1.90	5.3/5.5/6.5	5.2.7	31.8	53	25	28	90	C	I
⊛	WS31	3D	0.60	5.3/5.5/6.5	5.2.7	23.4	47	27	20	85	C	I
◕	WS31	11D	2.70	5.3/5.5/6.5	5.2.7	9.5	37	33	4	81	C	I

Tested in accordance with the following clauses of BS EN ISO 17892-12:2018+A2:2022
5.3 - Cone Penetrometer Method; 5.3.14 - One-Point Cone Penetrometer Method (factors are from Table 1, BS 1377-2:2022);
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Compiled By		Date
Francesca Bennett	FRANCESCA BENNETT	10/12/24

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A635 Barnsley Bus RapidTransit Route	**765865**

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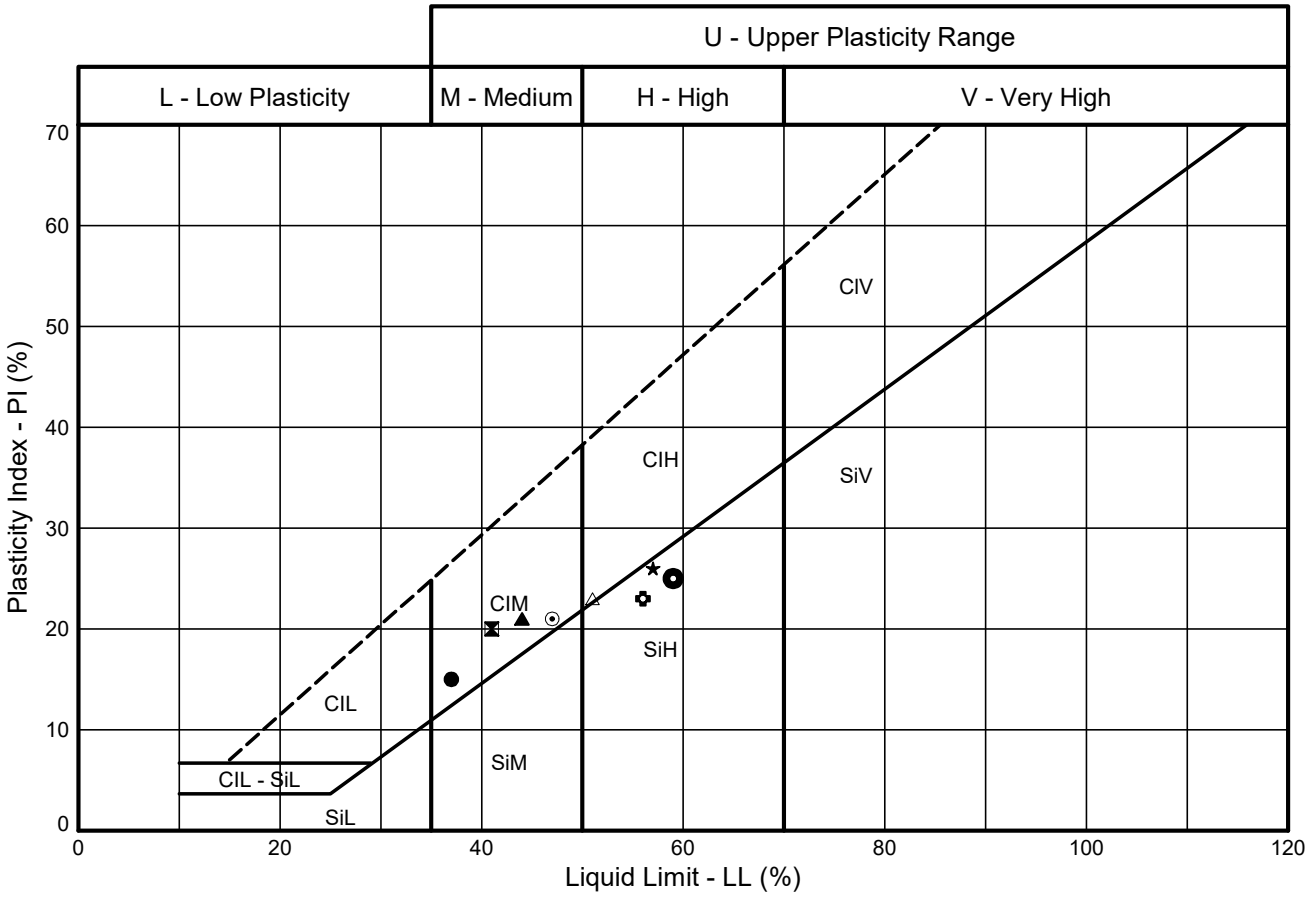

Sample Identification				Test Method #	Preparation Method +	WC	LL	PL	PI	<425µm	Lab location	Notes
	Exploratory Position ID	Sample	Depth (m)			%	%	%	%	%		
●	WS32	10D	2.50	5.3/5.5/6.5	5.2.7	16.7	37	22	15	31	C	I
⊠	WS32	13B	3.10	5.3/5.5/6.5	5.2.7	11.4	41	21	20	64	C	I
▲	WS33	2D	0.30	5.3/5.5/6.5	5.2.7	18.2	44	23	21	100	C	I
★	WS33	8DSPT	2.00	5.3/5.5/6.5	5.2.7	31.4	57	31	26	100	C	I
⊙	WS33	12DSPT	3.00	5.3/5.5/6.5	5.2.7	29.4	47	26	21	74	C	I
✿	WS34	4DSPT	1.20	5.3/5.5/6.5	5.2.7	15.0	56	33	23	84	C	I
●	WS34	5D	1.50	5.3/5.5/6.5	5.2.7	28.5	59	34	25	87	C	I
△	WS34	9D	2.60	5.3/5.5/6.5	5.2.7	23.8	51	28	23	70	C	I

Tested in accordance with the following clauses of BS EN ISO 17892-12:2018+A2:2022
5.3 - Cone Penetrometer Method; 5.3.14 - One-Point Cone Penetrometer Method (factors are from Table 1, BS 1377-2:2022);
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SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with Part 1,Part 12 of BS EN ISO 17892

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Water Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425um	Description of Sample
BH01	4	D	1.00	19.2	42	22	20	51	Dark brown very sandy very clayey silty GRAVEL
BH01	7	D	2.40	16.2	49	23	26	64	Brown silty CLAY
BH02	4	D	1.00	27.1	55	28	27	74	Brown slightly gravelly very sandy CLAY
BH02	8	D	1.70	20.1	48	27	21	60	Black silty CLAY
BH03	7	D	2.20	23.4	63	28	35	60	Dark brown silty CLAY
BH06	10	D	2.00	40.0	71	29	42	90	Brown grey slightly sandy slightly gravelly CLAY
BH06	12	D	2.95	27.2	48	27	21	92	Brown grey silty slightly gravelly CLAY
BH06	16	D	4.00	25.8	48	23	25	78	Brown gravelly sandy CLAY

SYMBOLS: * denotes BS 1377

STRUCTURAL SOILS LTD

Contract:

A635 Barnsley Bus RapidTransit Route

Contract Ref:

765865

AGS

SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with Part 1,Part 12 of BS EN ISO 17892

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Water Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425um	Description of Sample
BH06	21	D	5.00	8.7	36	20	16	64	Brown sandy CLAY with mudstone
BH07	1	D	0.10	10.7	59	36	23	65	Brown gravelly sandy TOPSOIL with organic material
BH07	3	D	1.00	24.1	64	37	27	80	Brown sandy silty CLAY
BH07	11	D	1.40	15.6	66	32	34	58	Brown gravelly sandy TOPSOIL with organic material
BH07	13	D	2.30	21.7	53	30	23	55	Dark brown sandy silty CLAY
BH08	12	D	3.00	31.1	70	28	42	100	Brown grey silty CLAY
BH08	14	D	3.95	33.8	57	29	28	91	Brown grey silty CLAY
BH08	18	D	5.00	29.9	54	30	24	85	Brown sandy slightly gravelly silty CLAY

SYMBOLS: * denotes BS 1377

STRUCTURAL SOILS LTD

Contract:

A635 Barnsley Bus RapidTransit Route

Contract Ref:

765865

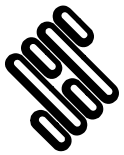
AGS

SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with Part 1,Part 12 of BS EN ISO 17892

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Water Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425um	Description of Sample
BH08	21	D	6.45	23.0	51	24	27	51	Dark brown mudstone slightly sandy CLAY
BH08	22	D	7.00	25.6	52	27	25	57	Dark brown sandy CLAY with mudstone
BH08	27	D	8.00	17.2	48	25	23	85	Dark brown sandy silty CLAY
BH09	10	D	2.40	16.5	37	20	17	55	Brown slightly gravelly sandy CLAY
BH09	19	D	4.95	30.3	66	37	29	91	Brown grey silty CLAY
BH09	25	D	7.00	21.0	53	24	29	49	Brown very sandy CLAY
BH09	28	D	7.95	26.7	60	29	31	69	Brown very sandy slightly gravelly CLAY
BH09	30	D	8.50	22.2	52	34	18	62	Dark brown sandy silty CLAY

SYMBOLS: * denotes BS 1377



STRUCTURAL SOILS LTD

Contract:

A635 Barnsley Bus RapidTransit Route

Contract Ref:

765865

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SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with Part 1,Part 12 of BS EN ISO 17892

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Water Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425um	Description of Sample
BH10	8	D	2.00	11.0	NP	NP	NP	61	Brown gravelly slightly clayey SAND
BH10	16	D	3.95	26.6	46	25	21	79	Brown sandy silty CLAY
BH10	21	D	5.50	26.6	47	27	20	88	Brown sandy CLAY
BH10	23	D	6.45	25.0	56	25	31	91	Brown grey slightly gravelly slightly sandy silty CLAY
BH11	9	D	2.00	14.9	32	20	12	57	Brown sandy slightly gravelly CLAY
BH11	27	D	7.00	13.8	25	15	10	49	Brown gravelly sandy CLAY
BH11	32	D	8.50	15.0	29	17	12	53	Brown gravelly very sandy CLAY
BH11	37	D	9.50	11.5	31	17	14	71	Brown slightly gravelly very sandy CLAY

SYMBOLS: * denotes BS 1377

STRUCTURAL SOILS LTD

Contract:

A635 Barnsley Bus RapidTransit Route

Contract Ref:

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SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with Part 1,Part 12 of BS EN ISO 17892

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Water Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425um	Description of Sample
BH12	4	D	1.00	24.0	47	34	13	45	Brown slightly gravelly sandy CLAY
BH13	5	D	1.10	19.0	39	24	15	65	Dark brown sandy slightly gravelly silty CLAY
BH13	7	D	1.45	29.8	48	26	22	82	Brown silty slightly sandy CLAY
BH14	8	D	2.00	11.2	40	21	19	72	Brown silty layered CLAY
BH14A	3	D	0.50	9.3	39	20	19	53	Brown gravelly sandy CLAY (topsoil) with organic material
BH15	204	DSPT	3.00	17.6	40	19	21	85	Brown mudstone CLAY
BH15	11	D	5.00	23.6	37	21	16	68	Brown silty mudstone CLAY
BH15	13	D	6.90	16.8	34	20	14	77	Brown grey silty CLAY

SYMBOLS: * denotes BS 1377

STRUCTURAL SOILS LTD

Contract:

A635 Barnsley Bus RapidTransit Route

Contract Ref:

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SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with Part 1,Part 12 of BS EN ISO 17892

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Water Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425um	Description of Sample
BH16	4	D	1.00	23.8	45	23	22	62	Brown gravelly very sandy CLAY
BH16	6	D	2.90	24.8	49	23	26	69	Brown silty CLAY
BH16	7	D	3.55	46.6	77	42	35	88	Brown silty CLAY
BH16	8	D	4.20	48.7	67	35	32	93	Brown slightly sandy slightly gravelly clayey SILT
BH16	9	D	5.20	18.4	37	18	19	80	Brown silty CLAY
WS02	3	D	0.50	14.7	54	30	24	36	Brown sandy MUDSTONE
WS03	5	DSPT	1.20	13.1	54	31	23	49	Brown gravelly clayey SILT
WS05	7	D	1.70	25.7	45	26	19	69	Brown grey slightly sandy slightly gravelly CLAY

SYMBOLS: * denotes BS 1377

STRUCTURAL SOILS LTD

Contract:

A635 Barnsley Bus RapidTransit Route

Contract Ref:

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SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with Part 1,Part 12 of BS EN ISO 17892

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Water Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425um	Description of Sample
WS05	11	DSPT	3.00	13.7	40	23	17	87	Brown grey slightly gravelly slightly sandy CLAY
WS06	9	D	2.00	23.8	40	17	23	96	Brown slightly sandy silty CLAY
WS07	5	D	1.80	28.4	55	29	26	100	Orange brown CLAY
WS08	6	D	1.10	27.1	46	23	23	76	Brown slightly gravelly sandy CLAY
WS08	14	DSPT	2.90	15.0	40	24	16	72	Brown gravelly sandy CLAY
WS09	6	D	1.70	31.2	40	22	18	84	Brown slightly gravelly sandy silty CLAY
WS09	12	DSPT	3.00	18.9	35	21	14	73	Brown slightly gravelly sandy silty CLAY
WS10	6	DSPT	1.20	18.6	39	19	20	93	Brown slightly sandy slightly silty CLAY

SYMBOLS: * denotes BS 1377

SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with Part 1,Part 12 of BS EN ISO 17892

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Water Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425um	Description of Sample
WS10	7	B	1.40	20.2	42	24	18	88	Brown mottled grey slightly gravelly slightly sandy silty CLAY
WS10	9	DSPT	2.00	10.4	34	21	13	71	Brown slightly gravelly sandy silty CLAY
WS13	7	D	1.90	24.6	64	35	29	35	Brown slightly gravelly sandy SILT
WS13	9	D	2.00	20.9	55	31	24	42	Dark brown gravelly sandy clayey SILT
WS17	3	D	0.85	25.4	61	33	28	86	Brown silty CLAY
WS17	7	D	1.40	19.3	52	25	27	74	Brown silty CLAY
WS17	13	DSPT	3.00	18.0	49	30	19	60	Dark brown silty CLAY
WS19	3	D	0.40	16.4	52	23	29	69	Brown silty CLAY

SYMBOLS: * denotes BS 1377

STRUCTURAL SOILS LTD

Contract:

A635 Barnsley Bus RapidTransit Route

Contract Ref:

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SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with Part 1,Part 12 of BS EN ISO 17892

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Water Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425um	Description of Sample
WS19	8	D	1.80	22.3	53	31	22	100	Brown grey silty CLAY
WS19	13	DSPT	3.00	24.3	49	28	21	79	Dark brown slightly gravelly sandy clayey SILT
WS19	17	DSPT	4.00	18.5	50	31	19	55	Brown mudstone silty CLAY
WS22	5	D	0.80	19.9	53	30	23	81	Brown sandy silty CLAY
WS23	1	D	0.10	16.2	53	32	21	66	Brown gravelly sandy clayey SILT
WS23	8	D	1.20	28.3	53	30	23	89	Brown sandy clayey SILT
WS23	11	DSPT	2.00	18.7	58	33	25	59	Dark brown slightly gravelly sandy clayey SILT
WS24	3	D	0.40	15.5	43	24	19	74	Brown mudstone silty sandy CLAY

SYMBOLS: * denotes BS 1377

STRUCTURAL SOILS LTD	Contract: **A635 Barnsley Bus RapidTransit Route**	Contract Ref: **765865**

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SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with Part 1,Part 12 of BS EN ISO 17892

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Water Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425um	Description of Sample
WS27	6	B	1.40	16.3	60	34	26	35	Dark brown slightly gravelly slightly sandy clayey SILT
WS29A	6	D	1.60	16.7	38	20	18	95	Brown mottled grey sandy silty CLAY
WS30	6	D	1.00	23.0	44	24	20	80	Brown sandy silty CLAY
WS30	11	D	1.90	31.8	53	25	28	90	Brown orange grey slightly sandy silty CLAY
WS31	3	D	0.60	23.4	47	27	20	85	Brown slightly gravelly silty CLAY
WS31	11	D	2.70	9.5	37	33	4	81	Brown grey MUDSTONE
WS32	10	D	2.50	16.7	37	22	15	31	Brown gravelly clayey SAND
WS32	13	B	3.10	11.4	41	21	20	64	Brown gravelly sandy silty CLAY

SYMBOLS: * denotes BS 1377

STRUCTURAL SOILS LTD

Contract:

A635 Barnsley Bus RapidTransit Route

Contract Ref:

765865

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SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with Part 1,Part 12 of BS EN ISO 17892

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Water Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425um	Description of Sample
WS33	2	D	0.30	18.2	44	23	21	100	Brown grey silty mudstone CLAY
WS33	8	DSPT	2.00	31.4	57	31	26	100	Brown silty CLAY
WS33	12	DSPT	3.00	29.4	47	26	21	74	Brown silty CLAY
WS34	4	DSPT	1.20	15.0	56	33	23	84	Brown slightly gravelly sandy clayey SILT
WS34	5	D	1.50	28.5	59	34	25	87	Dark brown silty CLAY
WS34	9	D	2.60	23.8	51	28	23	70	Brown slightly gravelly sandy silty CLAY

SYMBOLS: * denotes BS 1377

STRUCTURAL SOILS LTD

Contract:

A635 Barnsley Bus RapidTransit Route

Contract Ref:

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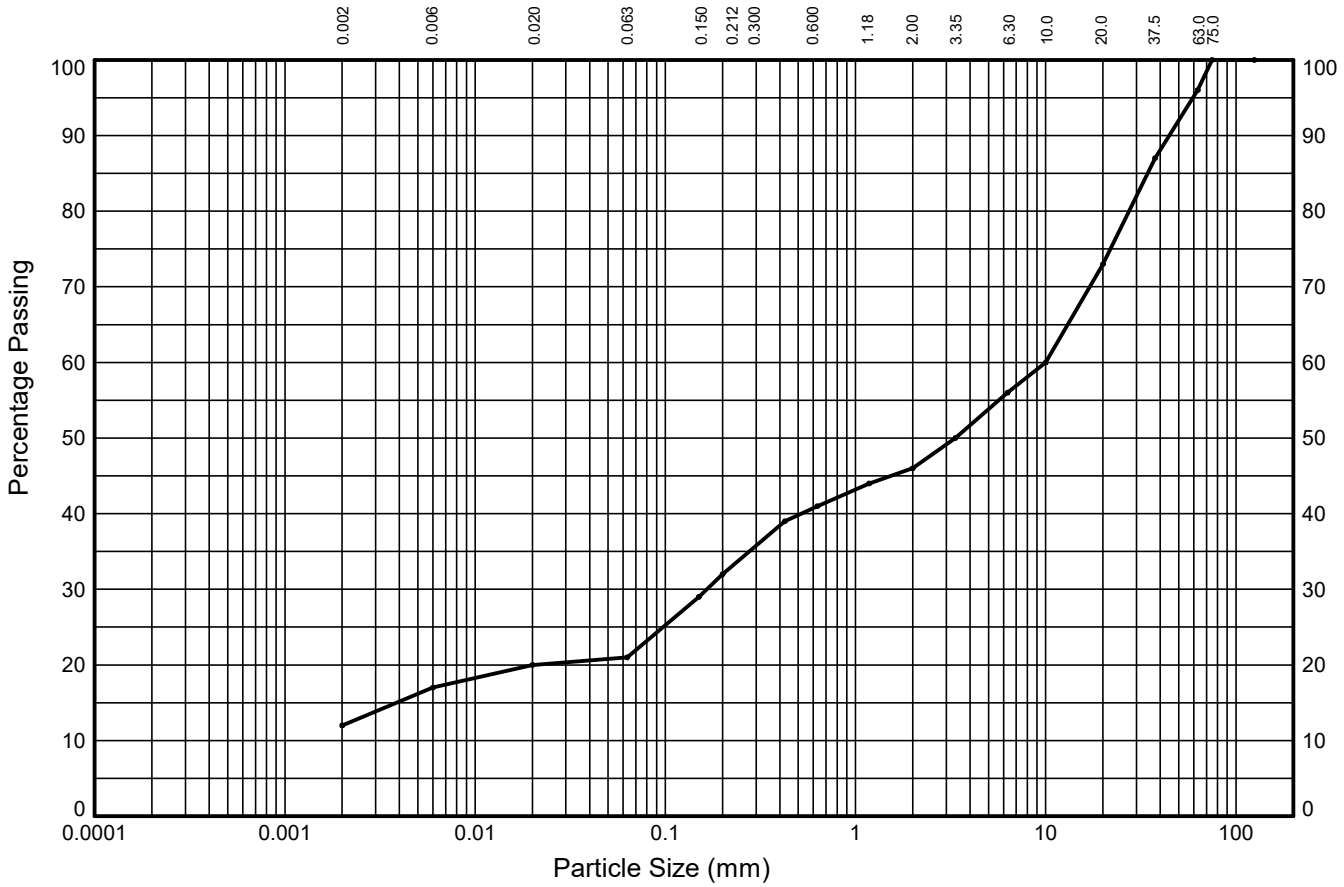
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Borehole: **BH01** Sample Ref: **3** Sample Type: **B** Depth (m): **1.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	5%	3%	1%	11%	9%	5%	10%	17%	23%	
	SILT			SAND			GRAVEL			
12%	9%			25%			50%			4%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**96**
37.5	**87**
20.0	**73**
10.0	**60**
6.30	**56**
3.35	**50**
2.00	**46**
1.18	**44**
0.630	**41**
0.425	**39**
0.200	**32**
0.150	**29**
0.063	**21**

Particle Diameter (mm)	Percent Passing (%)
0.02	**20**
0.006	**17**
0.002	**12**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**0.004**
D_{30} (mm)	**0.165**
D_{50} (mm)	**3.350**
D_{60} (mm)	**10.000**
D_{85} (mm)	**34.279**
D_{90} (mm)	**44.579**
C_U	**NA**
C_C	**NA**

Soil Description:

Brown very sandy very clayey GRAVEL with low cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
The Potteries
Pottery Street
Castleford
W. Yorkshire WF10 1NJ

Compiled By	Date
LUKE FISHER	10/12/24

Contract	Contract Ref:
A635 Barnsley Bus RapidTransit Route	**765865**

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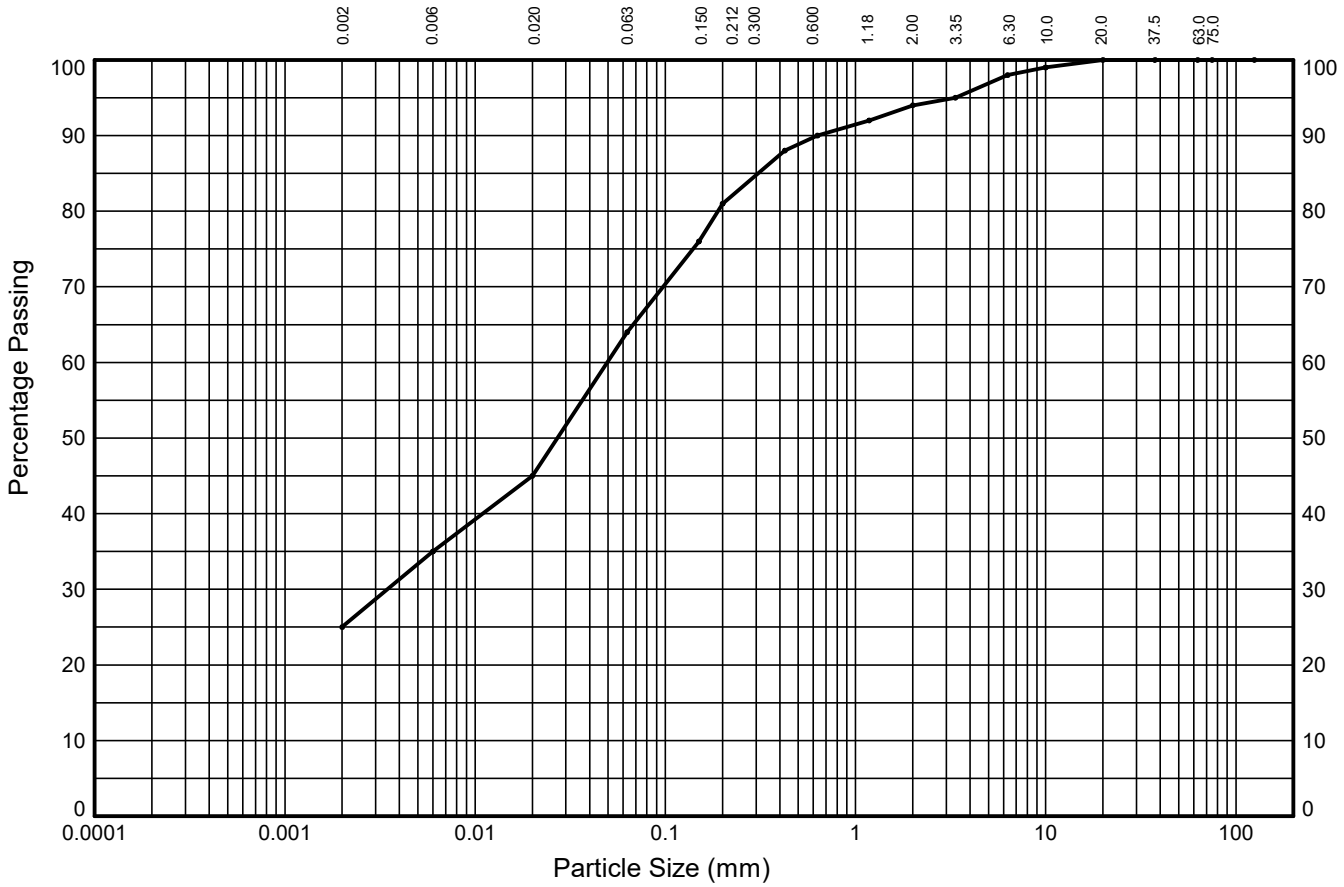
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Borehole: **BH02** Sample Ref: **3** Sample Type: **B** Depth (m): **1.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	10%	10%	19%	17%	9%	4%	4%	2%	0%	
	SILT			SAND			GRAVEL			
25%	39%			30%			6%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**100**
10.0	**99**
6.30	**98**
3.35	**95**
2.00	**94**
1.18	**92**
0.630	**90**
0.425	**88**
0.200	**81**
0.150	**76**
0.063	**64**

Particle Diameter (mm)	Percent Passing (%)
0.02	**45**
0.006	**35**
0.002	**25**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**NA**
D_{30} (mm)	**0.003**
D_{50} (mm)	**0.027**
D_{60} (mm)	**0.049**
D_{85} (mm)	**0.308**
D_{90} (mm)	**0.630**
C_U	**NA**
C_C	**NA**

Soil Description:

Brown slightly gravelly slightly sandy silty CLAY

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
The Potteries
Pottery Street
Castleford
W. Yorkshire WF10 1NJ

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**10/12/24**

Contract	Contract Ref:
A635 Barnsley Bus RapidTransit Route	**765865**

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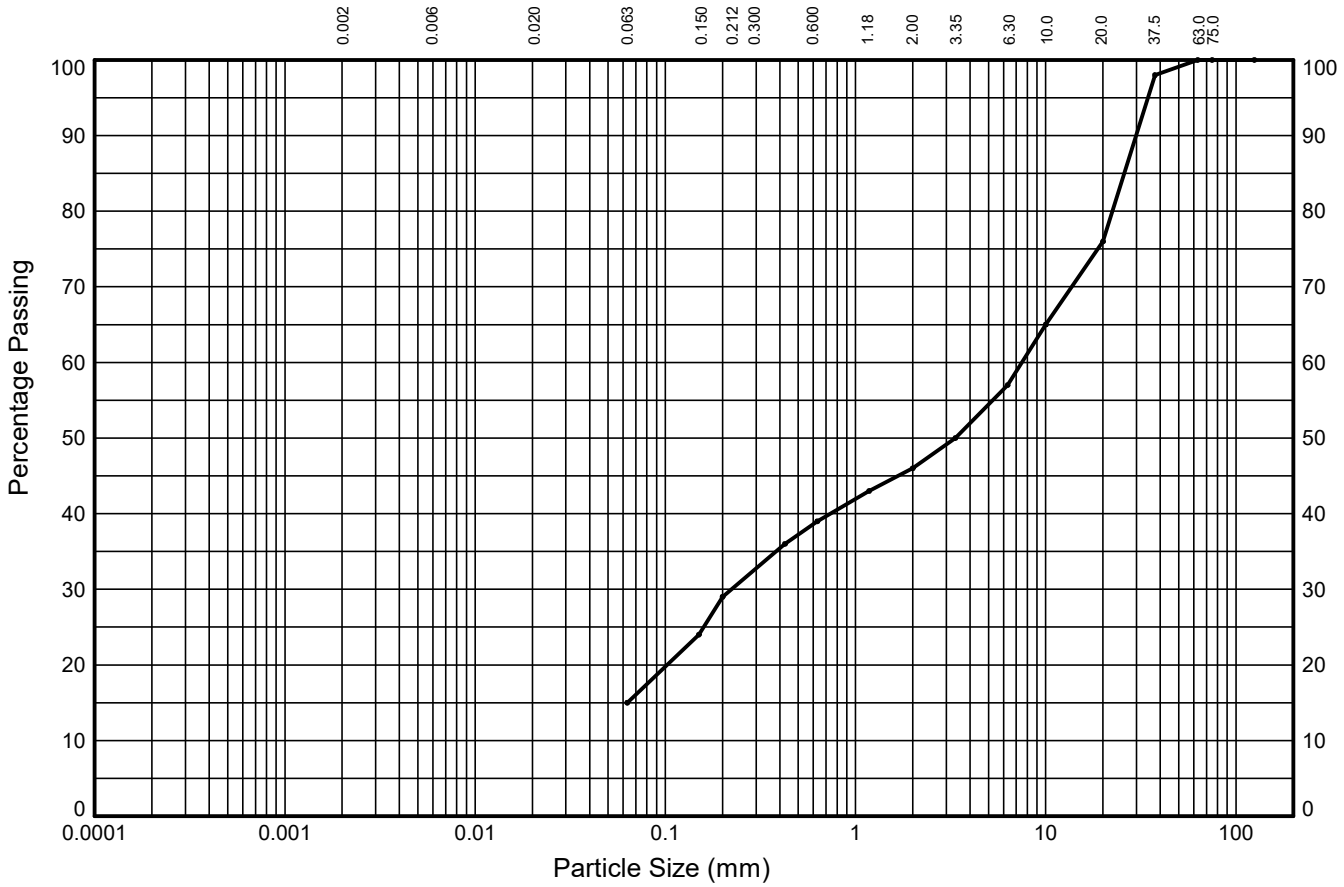
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016

Borehole: **BH03** Sample Ref: **4** Sample Type: **B** Depth (m): **0.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	14%	10%	7%	11%	19%	24%	
	SILT			SAND			GRAVEL			
15%				31%			54%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**98**
20.0	**76**
10.0	**65**
6.30	**57**
3.35	**50**
2.00	**46**
1.18	**43**
0.630	**39**
0.425	**36**
0.200	**29**
0.150	**24**
0.063	**15**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**0.063**
D_{30} (mm)	**0.223**
D_{50} (mm)	**3.350**
D_{60} (mm)	**7.492**
D_{85} (mm)	**25.865**
D_{90} (mm)	**29.837**
C_U	**NA**
C_C	**NA**

Soil Description:

Brown very sandy clayey GRAVEL

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

STRUCTURAL SOILS
The Potteries
Pottery Street
Castleford
W. Yorkshire WF10 1NJ

Compiled By	Date
LORNA WHITWORTH	10/12/24

Contract	Contract Ref:
A635 Barnsley Bus RapidTransit Route	**765865**

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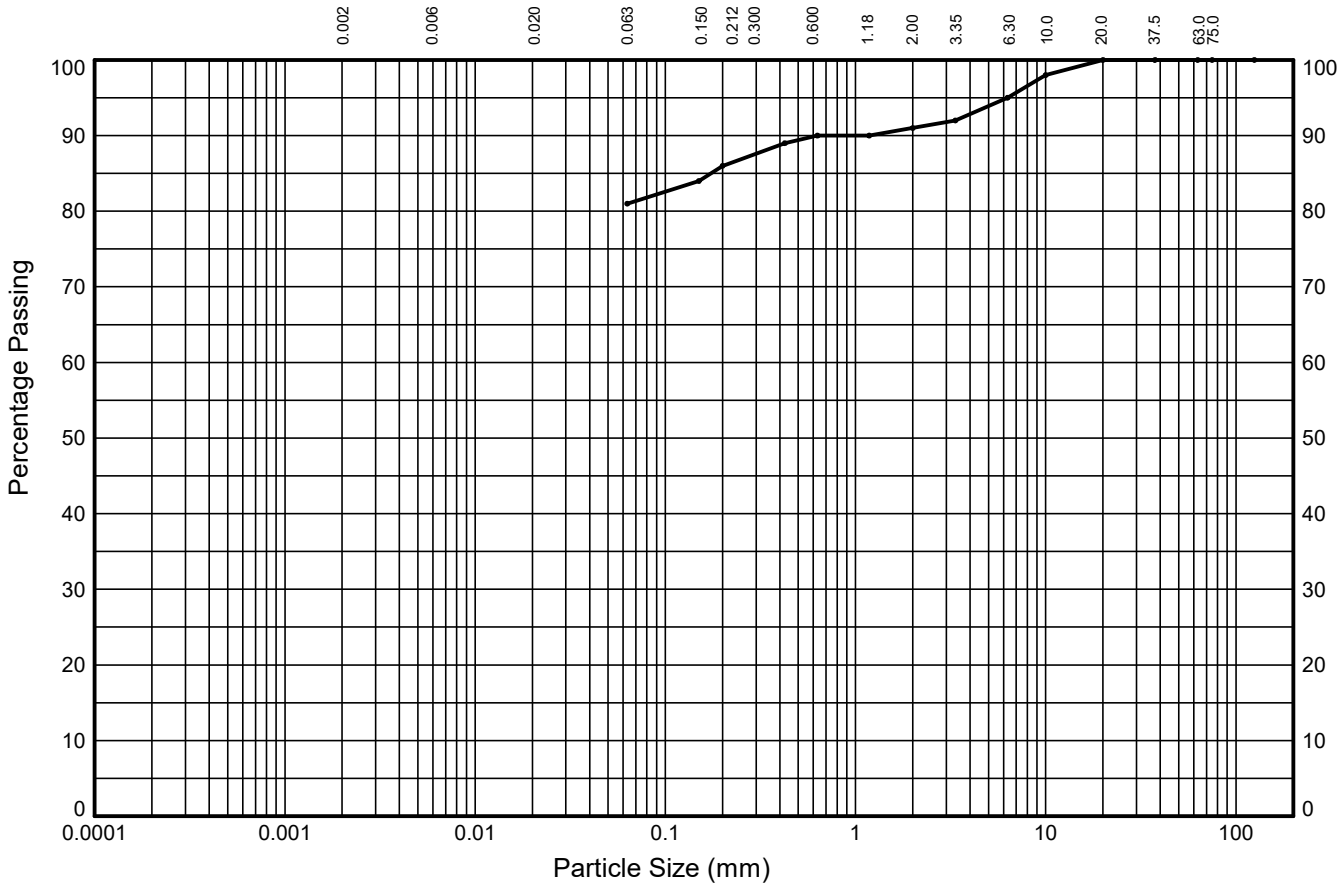
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016

Borehole: **BH03** Sample Ref: **8** Sample Type: **B** Depth (m): **2.70**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	5%	4%	1%	4%	5%	0%	
	SILT			SAND			GRAVEL			
81%				10%			9%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**100**
10.0	**98**
6.30	**95**
3.35	**92**
2.00	**91**
1.18	**90**
0.630	**90**
0.425	**89**
0.200	**86**
0.150	**84**
0.063	**81**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**NA**
D_{30} (mm)	**NA**
D_{50} (mm)	**NA**
D_{60} (mm)	**NA**
D_{85} (mm)	**0.173**
D_{90} (mm)	**0.630**
C_U	**NA**
C_C	**NA**

Soil Description:

Brown slightly gravelly slightly sandy CLAY

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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The Potteries
Pottery Street
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W. Yorkshire WF10 1NJ

Compiled By	Date
LORNA WHITWORTH	10/12/24

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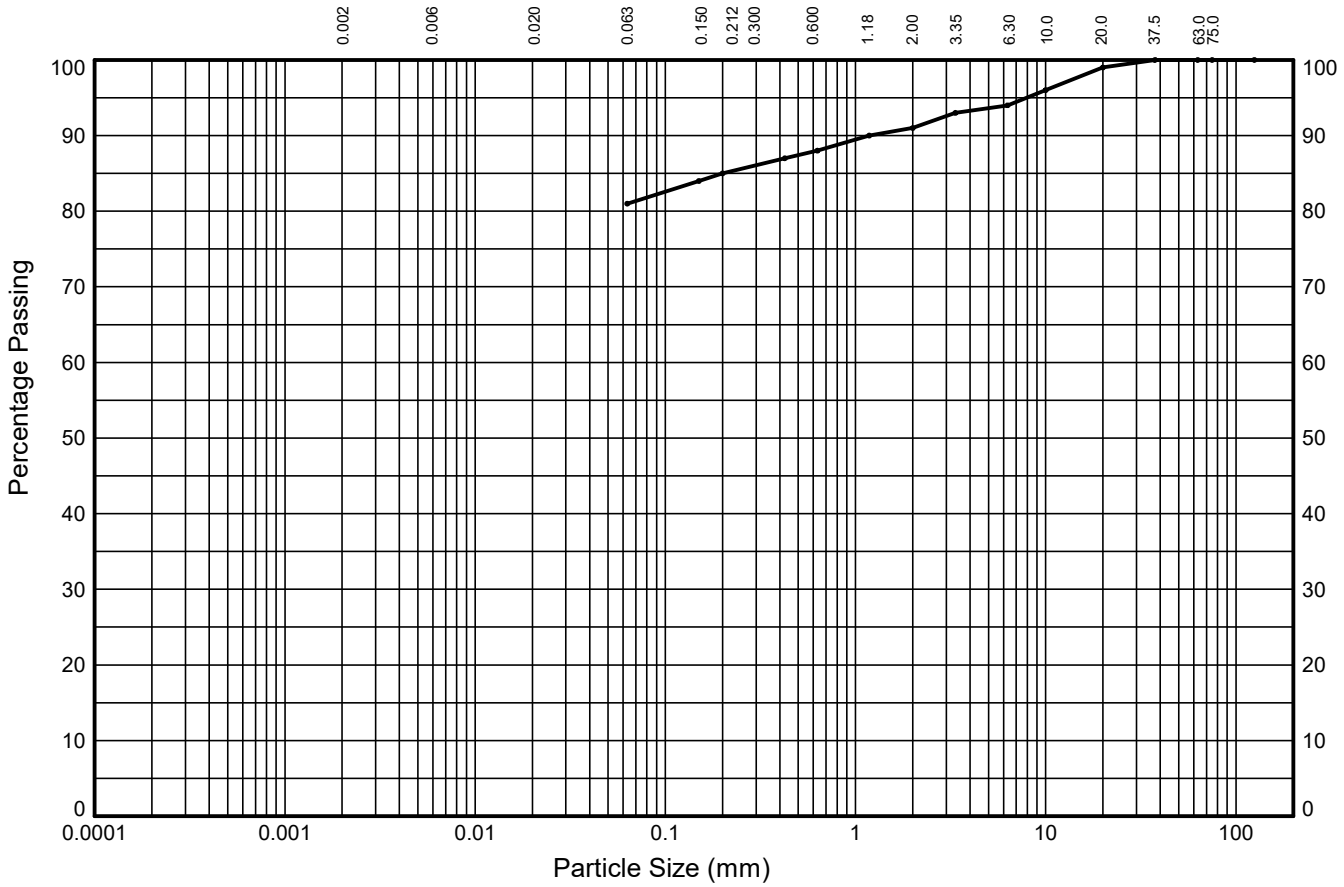
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016

Borehole: **BH06** Sample Ref: **9** Sample Type: **B** Depth (m): **1.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	4%	3%	3%	3%	5%	1%	
	SILT			SAND			GRAVEL			
81%				10%			9%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**99**
10.0	**96**
6.30	**94**
3.35	**93**
2.00	**91**
1.18	**90**
0.630	**88**
0.425	**87**
0.200	**85**
0.150	**84**
0.063	**81**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**NA**
D_{30} (mm)	**NA**
D_{50} (mm)	**NA**
D_{60} (mm)	**NA**
D_{85} (mm)	**0.200**
D_{90} (mm)	**1.180**
C_U	**NA**
C_C	**NA**

Soil Description:

Brown mottled grey slightly sandy slightly gravelly CLAY

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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The Potteries
Pottery Street
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Compiled By	Date
LORNA WHITWORTH	**10/12/24**

Contract	Contract Ref:
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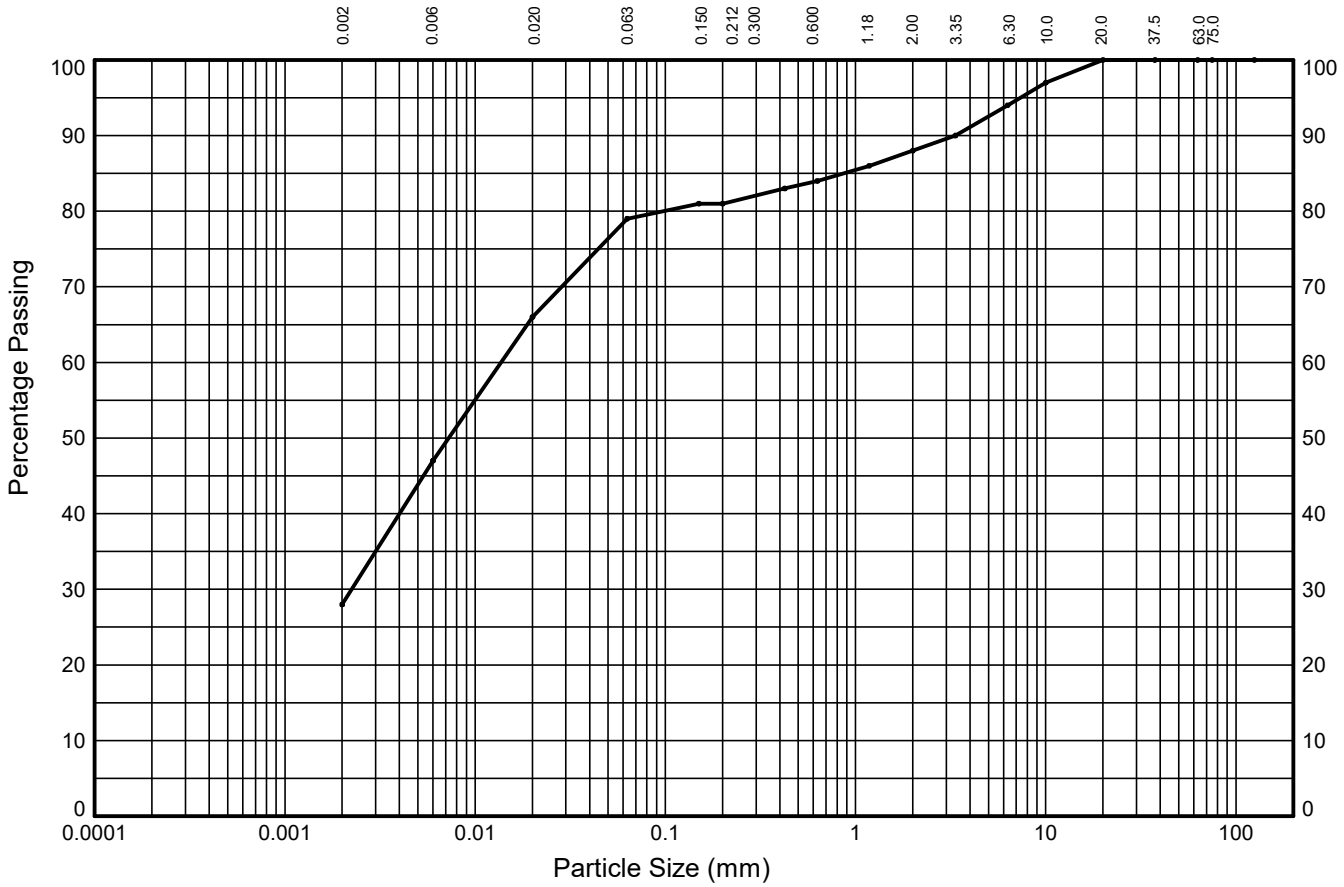
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Borehole: **BH06** Sample Ref: **17** Sample Type: **B** Depth (m): **4.10**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	19%	19%	13%	2%	3%	4%	6%	6%	0%	
	SILT			SAND			GRAVEL			
28%	51%			9%			12%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**100**
10.0	**97**
6.30	**94**
3.35	**90**
2.00	**88**
1.18	**86**
0.630	**84**
0.425	**83**
0.200	**81**
0.150	**81**
0.063	**79**

Particle Diameter (mm)	Percent Passing (%)
0.02	**66**
0.006	**47**
0.002	**28**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**NA**
D_{30} (mm)	**0.002**
D_{50} (mm)	**0.007**
D_{60} (mm)	**0.014**
D_{85} (mm)	**0.862**
D_{90} (mm)	**3.350**
C_U	**NA**
C_C	**NA**

Soil Description:

Brown mottled grey slightly sandy slightly gravelly silty CLAY

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Contract	Contract Ref:
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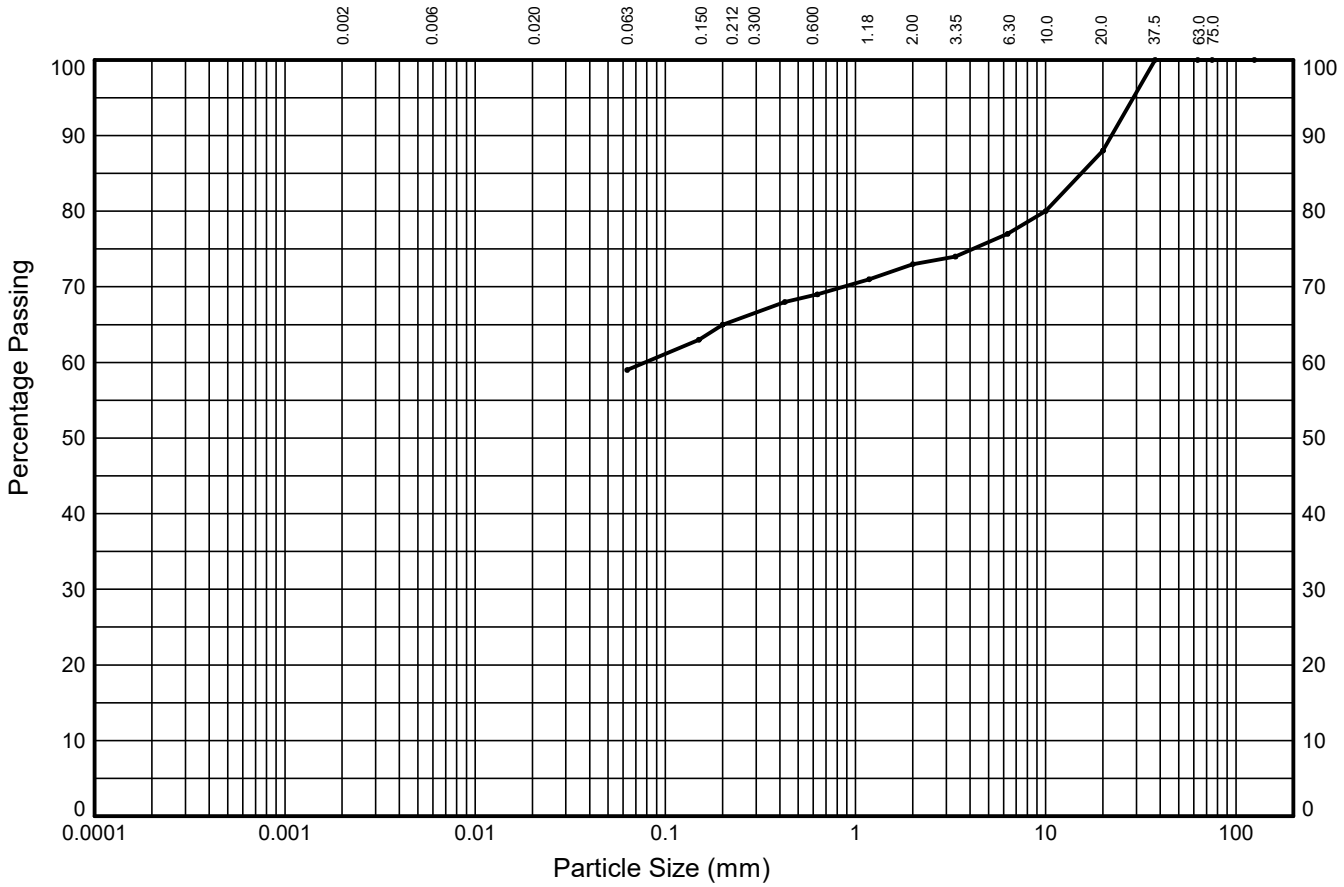
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016

Borehole: **BH07** Sample Ref: **1** Sample Type: **D** Depth (m): **0.10**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	6%	4%	4%	4%	11%	12%	
	SILT			SAND			GRAVEL			
59%				14%			27%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**88**
10.0	**80**
6.30	**77**
3.35	**74**
2.00	**73**
1.18	**71**
0.630	**69**
0.425	**68**
0.200	**65**
0.150	**63**
0.063	**59**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**NA**
D_{30} (mm)	**NA**
D_{50} (mm)	**NA**
D_{60} (mm)	**0.078**
D_{85} (mm)	**15.422**
D_{90} (mm)	**22.209**
C_U	**NA**
C_C	**NA**

Soil Description:

Brown gravelly sandy TOPSOIL with organic material

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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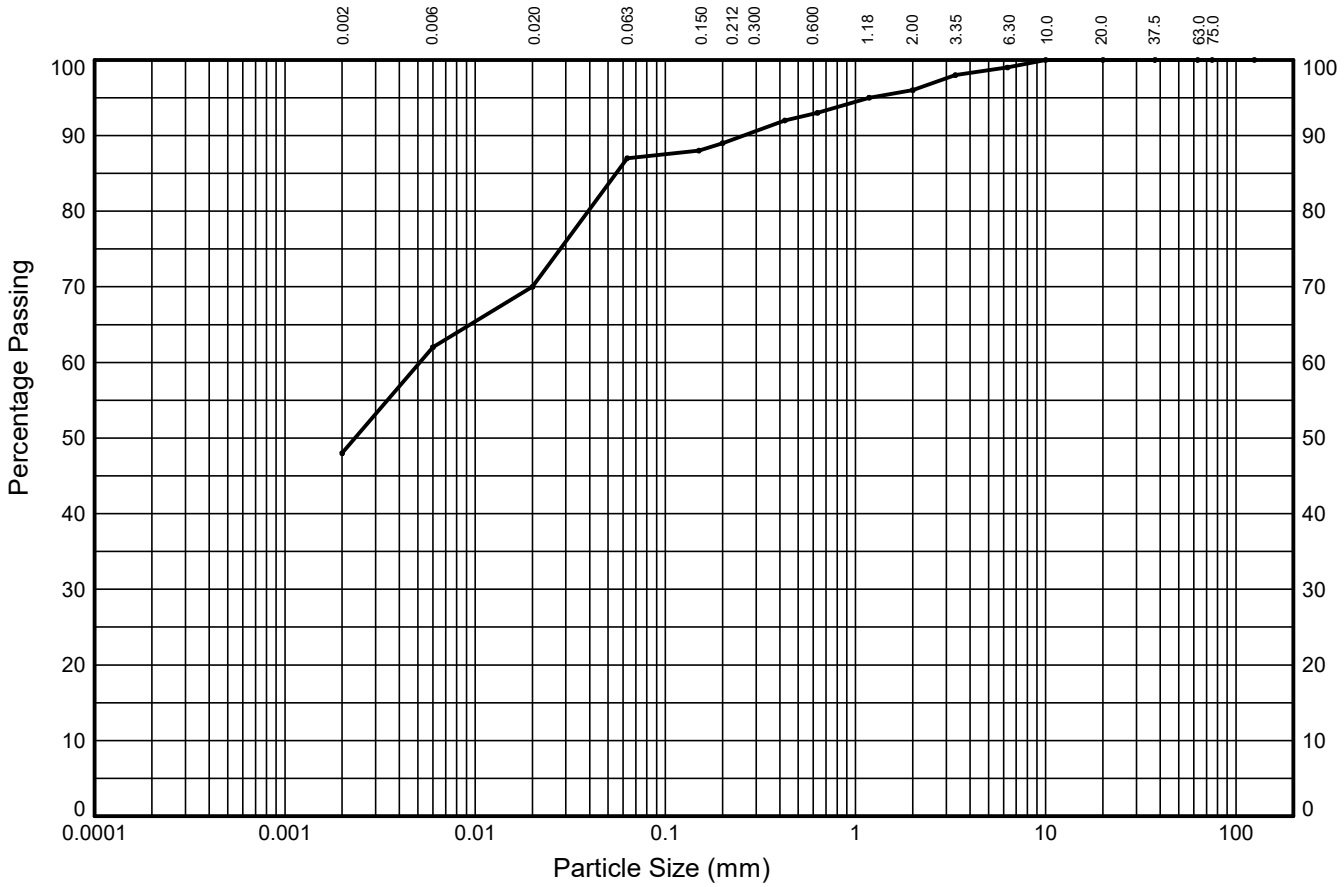
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Borehole: **BH07** Sample Ref: **4** Sample Type: **B** Depth (m): **1.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	14%	8%	17%	2%	4%	3%	3%	1%	0%	
	SILT			SAND			GRAVEL			
48%	39%			9%			4%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**100**
10.0	**100**
6.30	**99**
3.35	**98**
2.00	**96**
1.18	**95**
0.630	**93**
0.425	**92**
0.200	**89**
0.150	**88**
0.063	**87**

Particle Diameter (mm)	Percent Passing (%)
0.02	**70**
0.006	**62**
0.002	**48**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**NA**
D_{30} (mm)	**NA**
D_{50} (mm)	**0.002**
D_{60} (mm)	**0.005**
D_{85} (mm)	**0.055**
D_{90} (mm)	**0.257**
C_U	**NA**
C_C	**NA**

Soil Description:

Brown slightly gravelly slightly sandy silty CLAY

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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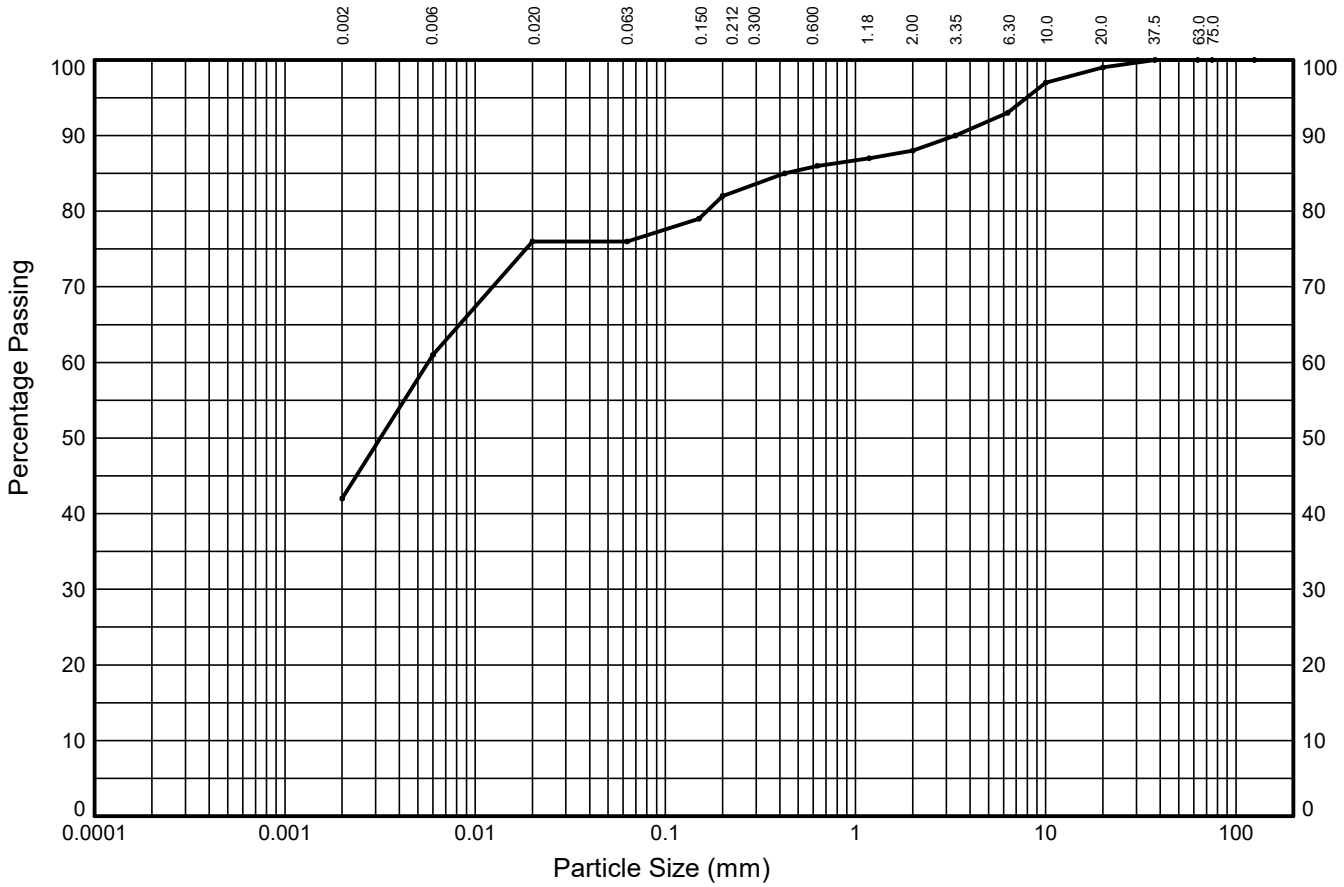
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Borehole: **BH08** Sample Ref: **11** Sample Type: **B** Depth (m): **2.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	19%	15%	0%	6%	4%	2%	5%	6%	1%	
	SILT			SAND			GRAVEL			
42%	34%			12%			12%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**99**
10.0	**97**
6.30	**93**
3.35	**90**
2.00	**88**
1.18	**87**
0.630	**86**
0.425	**85**
0.200	**82**
0.150	**79**
0.063	**76**

Particle Diameter (mm)	Percent Passing (%)
0.02	**76**
0.006	**61**
0.002	**42**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**NA**
D_{30} (mm)	**NA**
D_{50} (mm)	**0.003**
D_{60} (mm)	**0.006**
D_{85} (mm)	**0.425**
D_{90} (mm)	**3.350**
C_U	**NA**
C_C	**NA**

Soil Description:

Brown mottled grey slightly gravelly slightly sandy silty CLAY

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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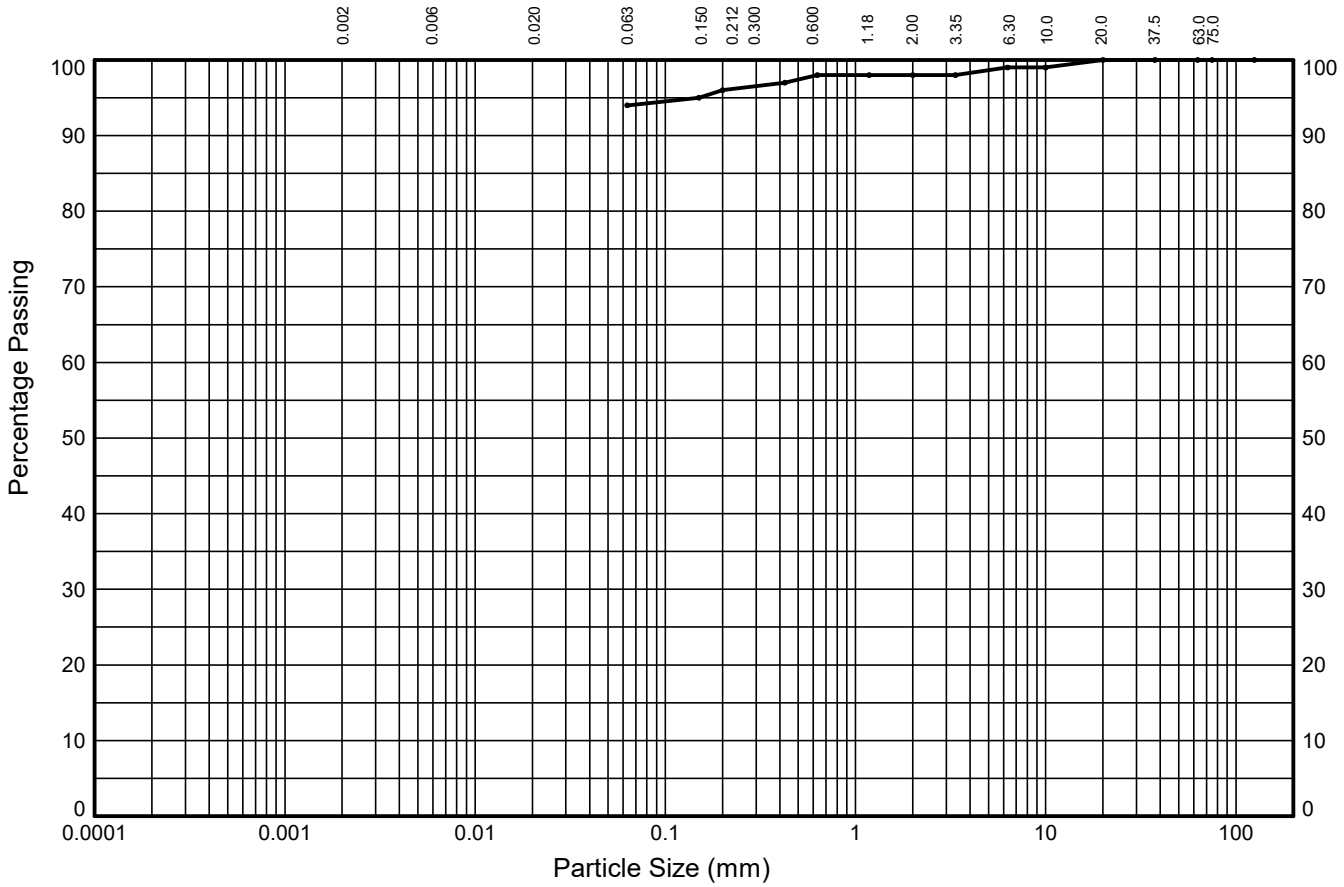
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016

Borehole: **BH08** Sample Ref: **17** Sample Type: **B** Depth (m): **4.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	2%	2%	0%	1%	1%	0%	
	SILT			SAND			GRAVEL			
94%				4%			2%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**100**
10.0	**99**
6.30	**99**
3.35	**98**
2.00	**98**
1.18	**98**
0.630	**98**
0.425	**97**
0.200	**96**
0.150	**95**
0.063	**94**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**NA**
D_{30} (mm)	**NA**
D_{50} (mm)	**NA**
D_{60} (mm)	**NA**
D_{85} (mm)	**NA**
D_{90} (mm)	**NA**
C_U	**NA**
C_C	**NA**

Soil Description:

Brown grey slightly gravelly slightly sandy CLAY

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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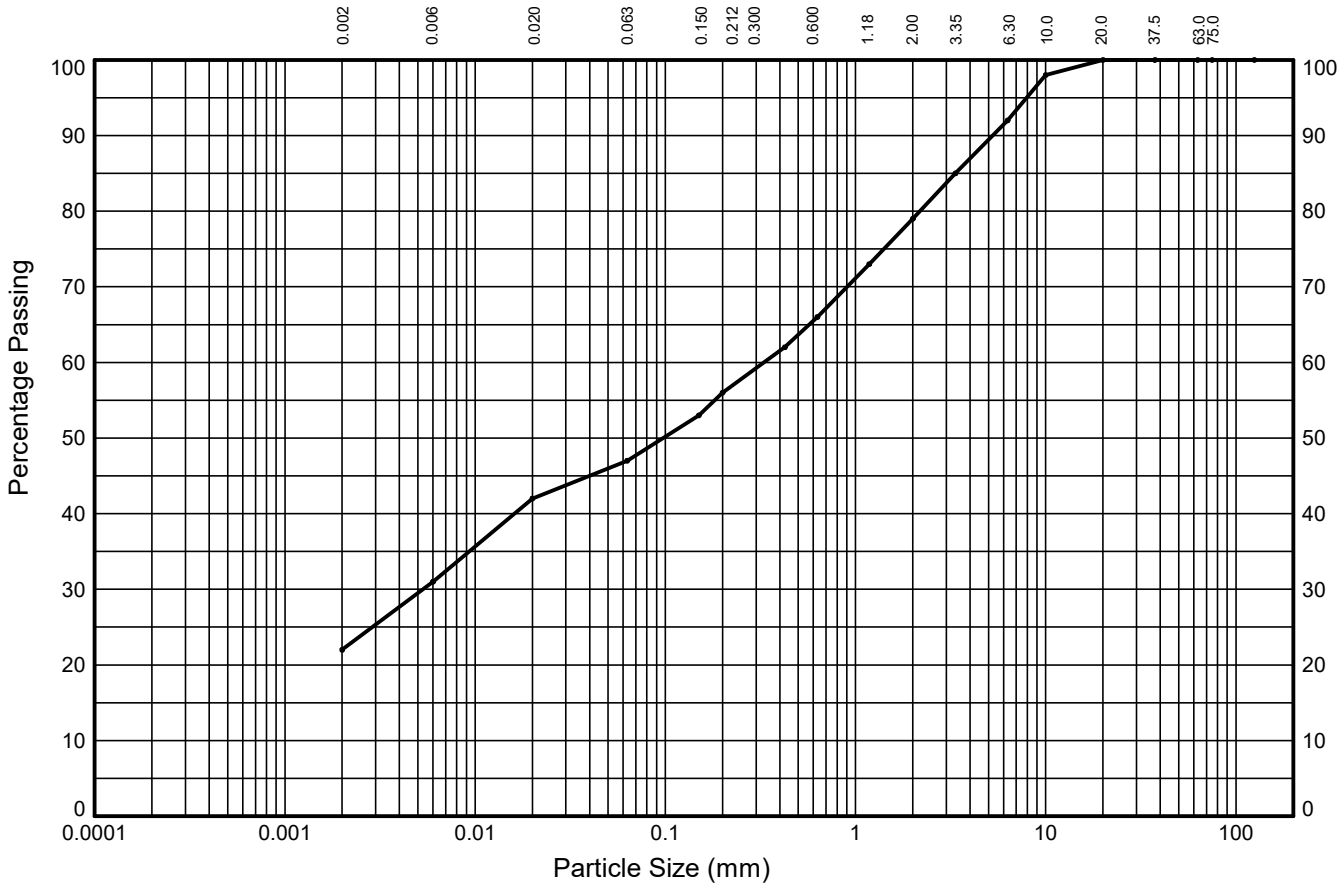
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Borehole: **BH08** Sample Ref: **23** Sample Type: **B** Depth (m): **7.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	9%	11%	5%	9%	10%	13%	13%	8%	0%	
	SILT			SAND			GRAVEL			
22%	25%			32%			21%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**100**
10.0	**98**
6.30	**92**
3.35	**85**
2.00	**79**
1.18	**73**
0.630	**66**
0.425	**62**
0.200	**56**
0.150	**53**
0.063	**47**

Particle Diameter (mm)	Percent Passing (%)
0.02	**42**
0.006	**31**
0.002	**22**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**NA**
D_{30} (mm)	**0.005**
D_{50} (mm)	**0.097**
D_{60} (mm)	**0.331**
D_{85} (mm)	**3.350**
D_{90} (mm)	**5.260**
C_U	**NA**
C_C	**NA**

Soil Description:

Dark grey slightly gravelly slightly sandy slightly silty CLAY

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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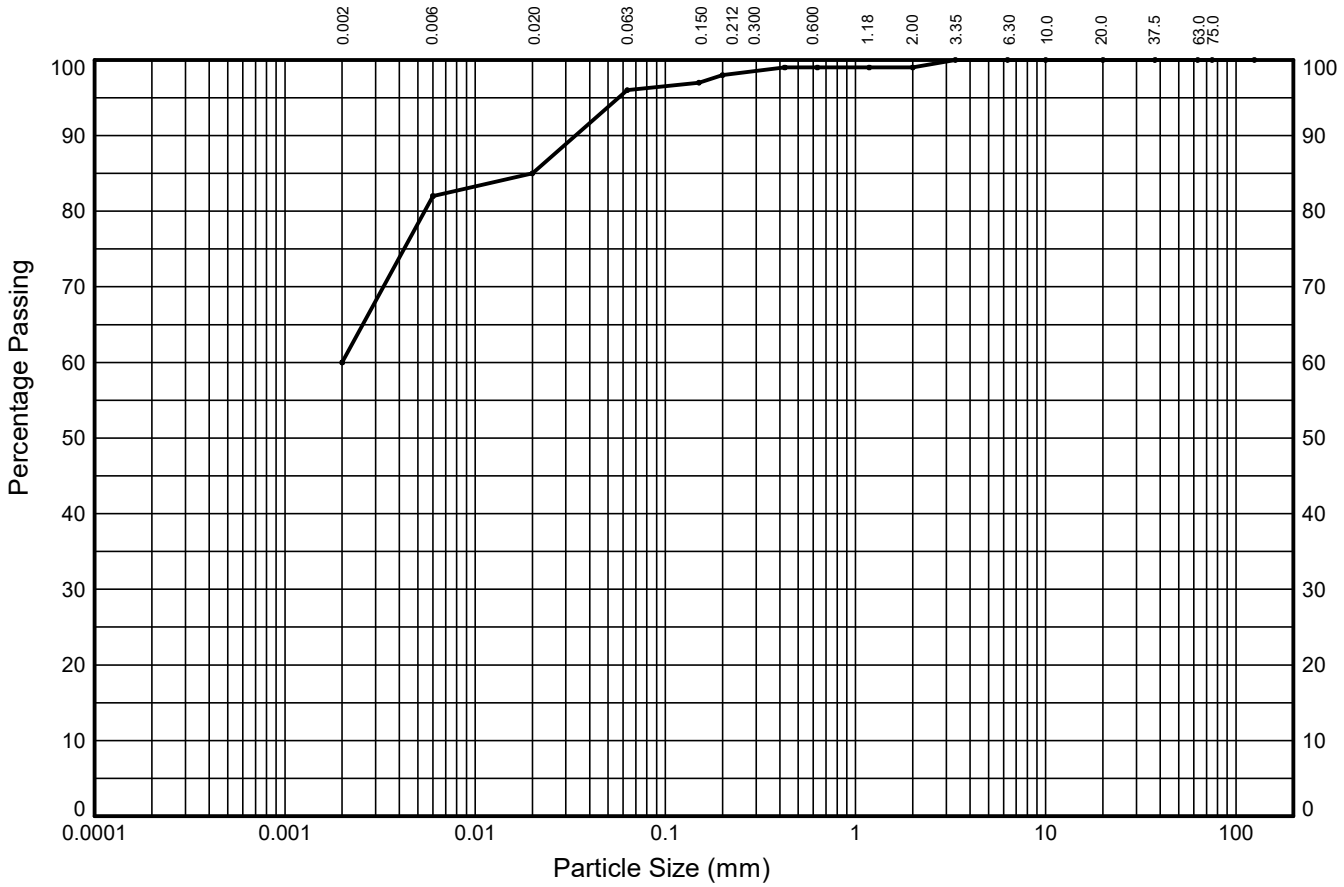
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Borehole: **BH09** Sample Ref: **16** Sample Type: **B** Depth (m): **3.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	22%	3%	11%	2%	1%	0%	1%	0%	0%	
	SILT			SAND			GRAVEL			
60%	36%			3%			1%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**100**
10.0	**100**
6.30	**100**
3.35	**100**
2.00	**99**
1.18	**99**
0.630	**99**
0.425	**99**
0.200	**98**
0.150	**97**
0.063	**96**

Particle Diameter (mm)	Percent Passing (%)
0.02	**85**
0.006	**82**
0.002	**60**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**NA**
D_{30} (mm)	**NA**
D_{50} (mm)	**NA**
D_{60} (mm)	**0.002**
D_{85} (mm)	**0.020**
D_{90} (mm)	**0.034**
C_U	**NA**
C_C	**NA**

Soil Description:

Grey slightly gravelly slightly sandy slightly silty CLAY

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Compiled By		Date
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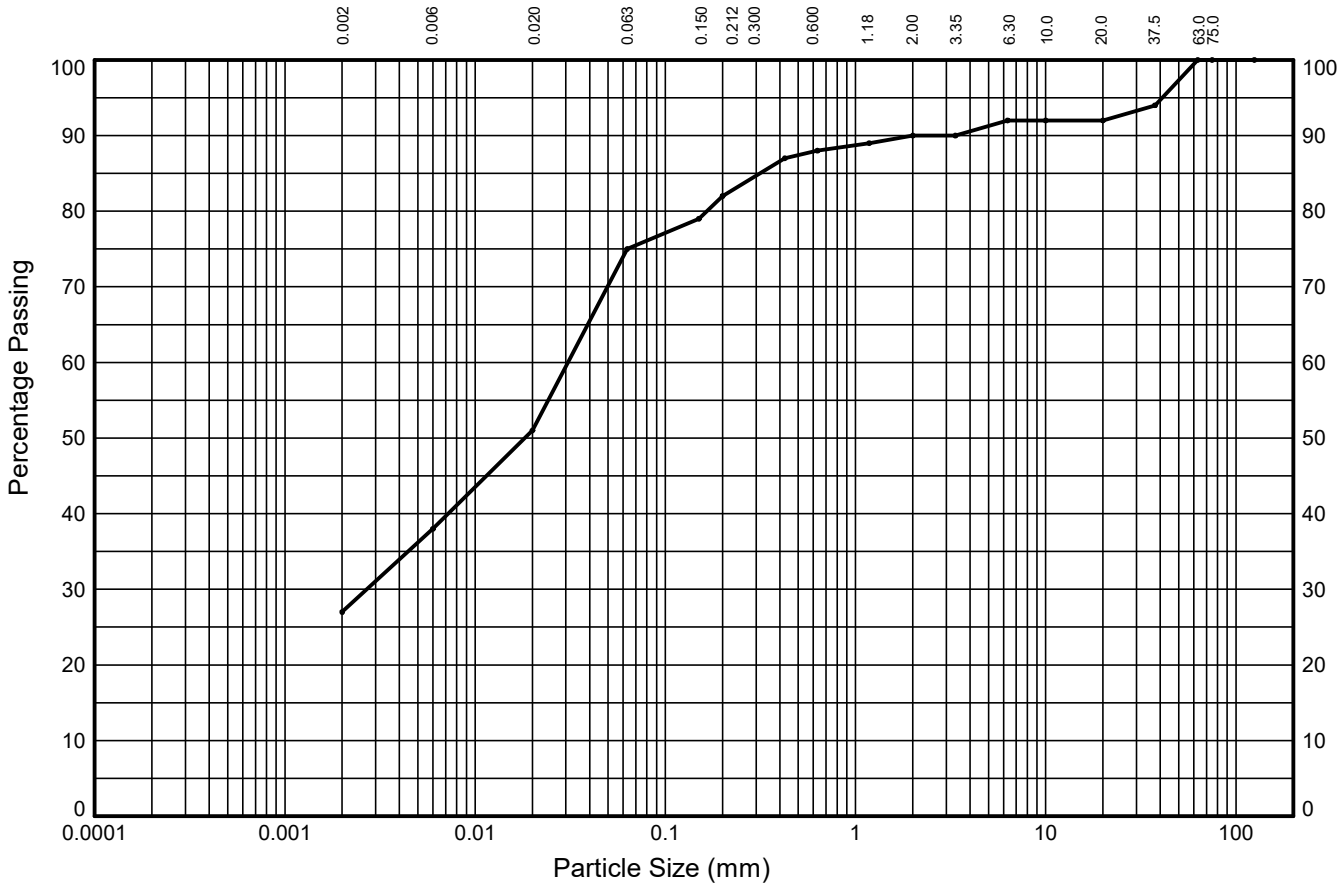
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Borehole: **BH09** Sample Ref: **23** Sample Type: **B** Depth (m): **6.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	11%	13%	24%	7%	6%	2%	2%	0%	8%	
	SILT			SAND			GRAVEL			
27%	48%			15%			10%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**94**
20.0	**92**
10.0	**92**
6.30	**92**
3.35	**90**
2.00	**90**
1.18	**89**
0.630	**88**
0.425	**87**
0.200	**82**
0.150	**79**
0.063	**75**

Particle Diameter (mm)	Percent Passing (%)
0.02	**51**
0.006	**38**
0.002	**27**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**NA**
D_{30} (mm)	**0.003**
D_{50} (mm)	**0.018**
D_{60} (mm)	**0.031**
D_{85} (mm)	**0.314**
D_{90} (mm)	**2.000**
C_U	**NA**
C_C	**NA**

Soil Description:

Brown grey slightly gravelly slightly sandy silty CLAY

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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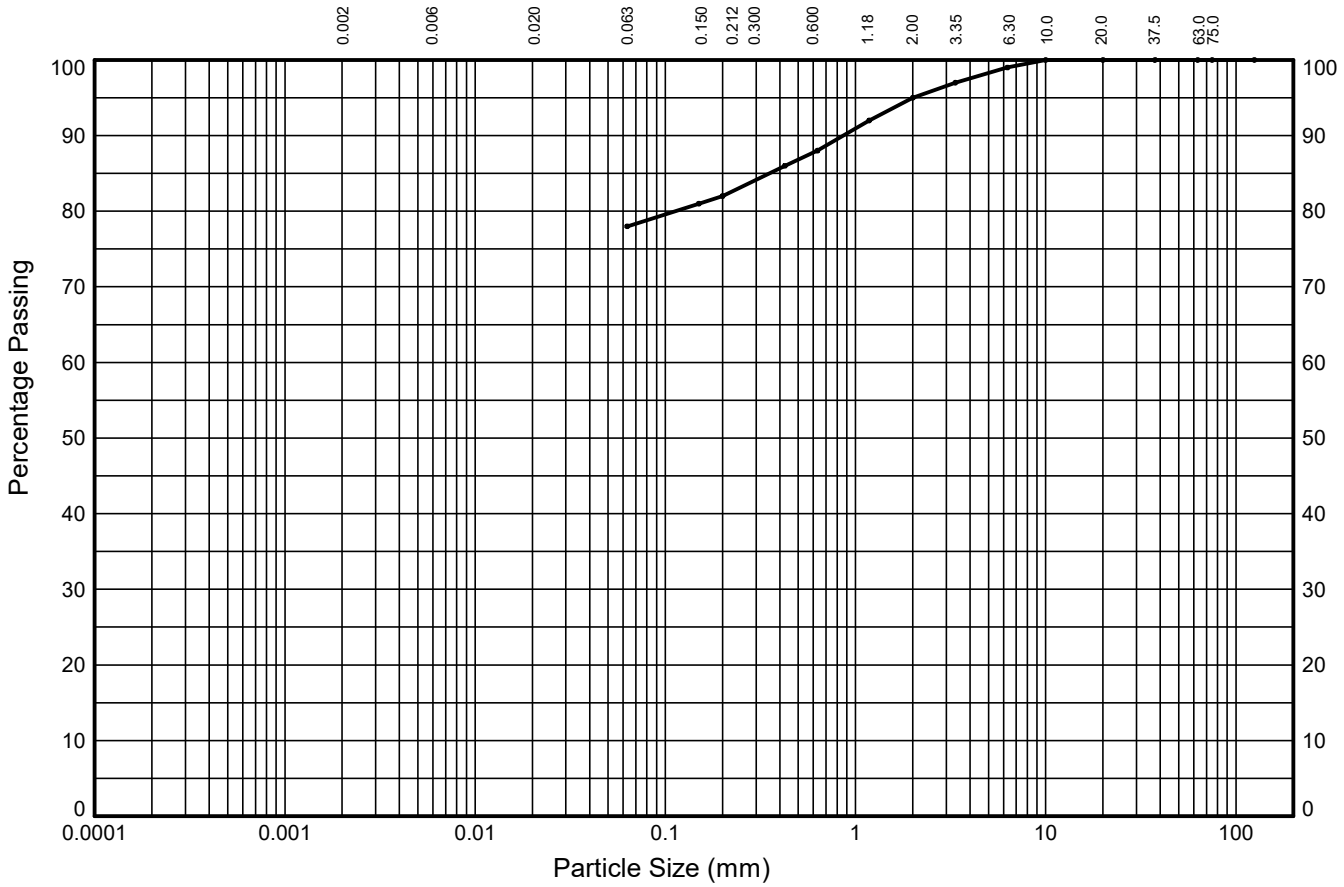
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016

Borehole: **BH09** Sample Ref: **29** Sample Type: **B** Depth (m): **8.10**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	4%	6%	7%	4%	1%	0%	
	SILT			SAND			GRAVEL			
78%				17%			5%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**100**
10.0	**100**
6.30	**99**
3.35	**97**
2.00	**95**
1.18	**92**
0.630	**88**
0.425	**86**
0.200	**82**
0.150	**81**
0.063	**78**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**NA**
D_{30} (mm)	**NA**
D_{50} (mm)	**NA**
D_{60} (mm)	**NA**
D_{85} (mm)	**0.352**
D_{90} (mm)	**0.862**
C_U	**NA**
C_C	**NA**

Soil Description:

Brown slightly gravelly slightly sandy CLAY

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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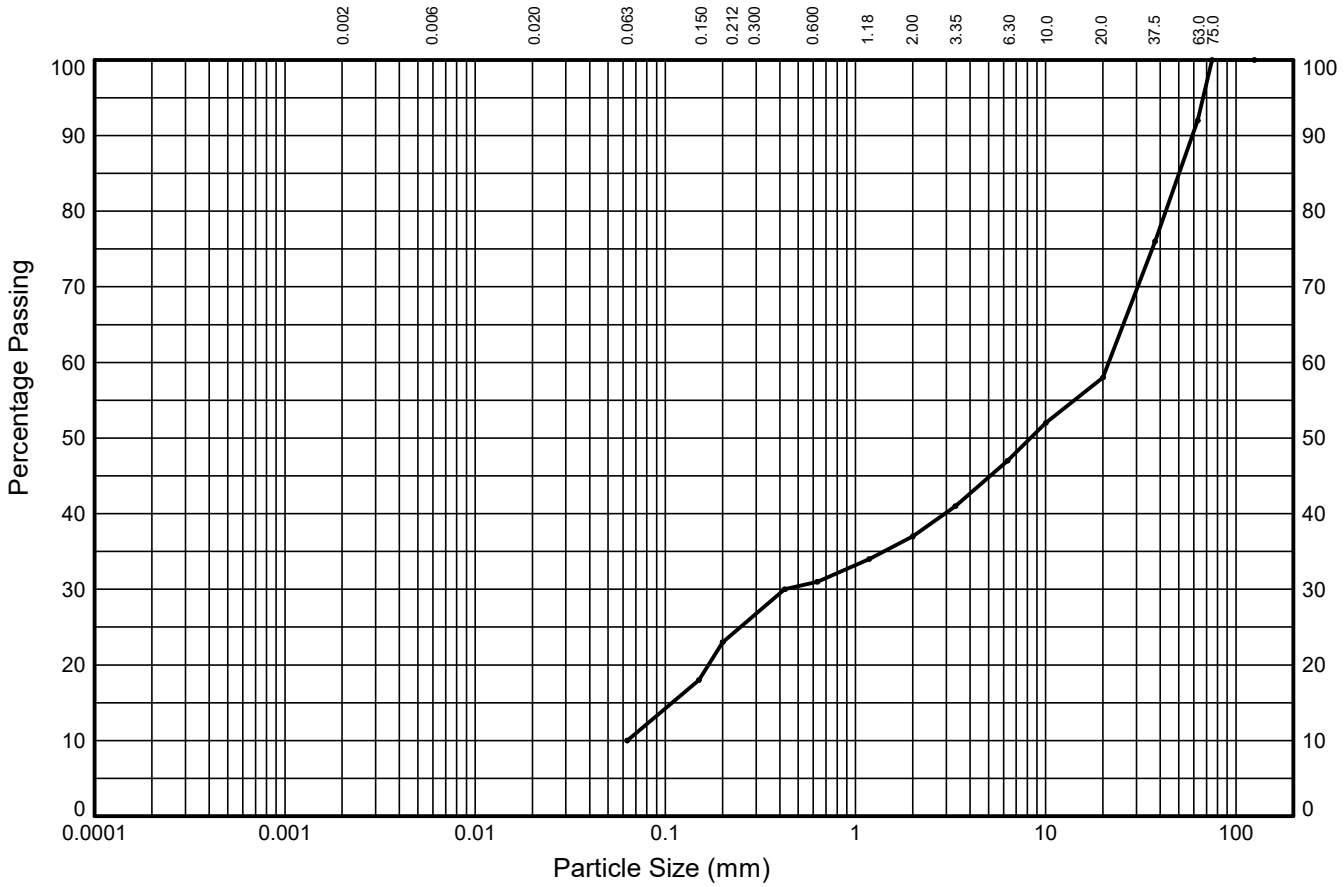
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016

Borehole: **BH10** Sample Ref: **4** Sample Type: **B** Depth (m): **0.80**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	13%	8%	6%	10%	11%	34%	
	SILT			SAND			GRAVEL			
10%				27%			55%			8%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**92**
37.5	**76**
20.0	**58**
10.0	**52**
6.30	**47**
3.35	**41**
2.00	**37**
1.18	**34**
0.630	**31**
0.425	**30**
0.200	**23**
0.150	**18**
0.063	**10**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.063**
D_{15} (mm)	**0.108**
D_{30} (mm)	**0.425**
D_{50} (mm)	**8.313**
D_{60} (mm)	**21.447**
D_{85} (mm)	**50.207**
D_{90} (mm)	**59.044**
C_U	**340**
C_C	**0.13**

Soil Description:

Brown very sandy clayey GRAVEL with medium cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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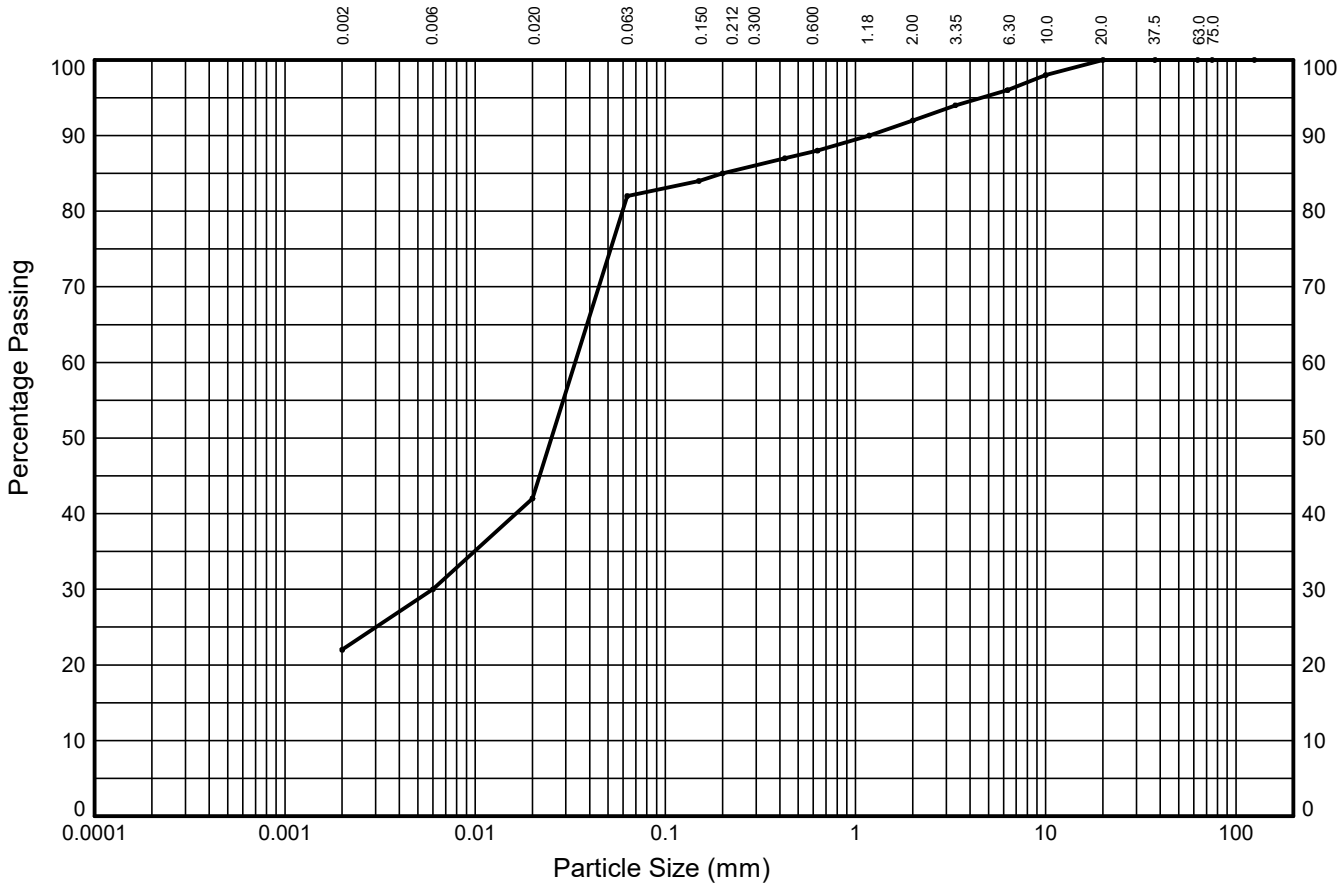
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Borehole: **BH10** Sample Ref: **19** Sample Type: **B** Depth (m): **4.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	8%	12%	40%	3%	3%	4%	4%	4%	0%	
	SILT			SAND			GRAVEL			
22%	60%			10%			8%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**100**
10.0	**98**
6.30	**96**
3.35	**94**
2.00	**92**
1.18	**90**
0.630	**88**
0.425	**87**
0.200	**85**
0.150	**84**
0.063	**82**

Particle Diameter (mm)	Percent Passing (%)
0.02	**42**
0.006	**30**
0.002	**22**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**NA**
D_{30} (mm)	**0.006**
D_{50} (mm)	**0.025**
D_{60} (mm)	**0.034**
D_{85} (mm)	**0.200**
D_{90} (mm)	**1.180**
C_U	**NA**
C_C	**NA**

Soil Description:

Dark brown grey slightly gravelly slightly sandy clayey SILT

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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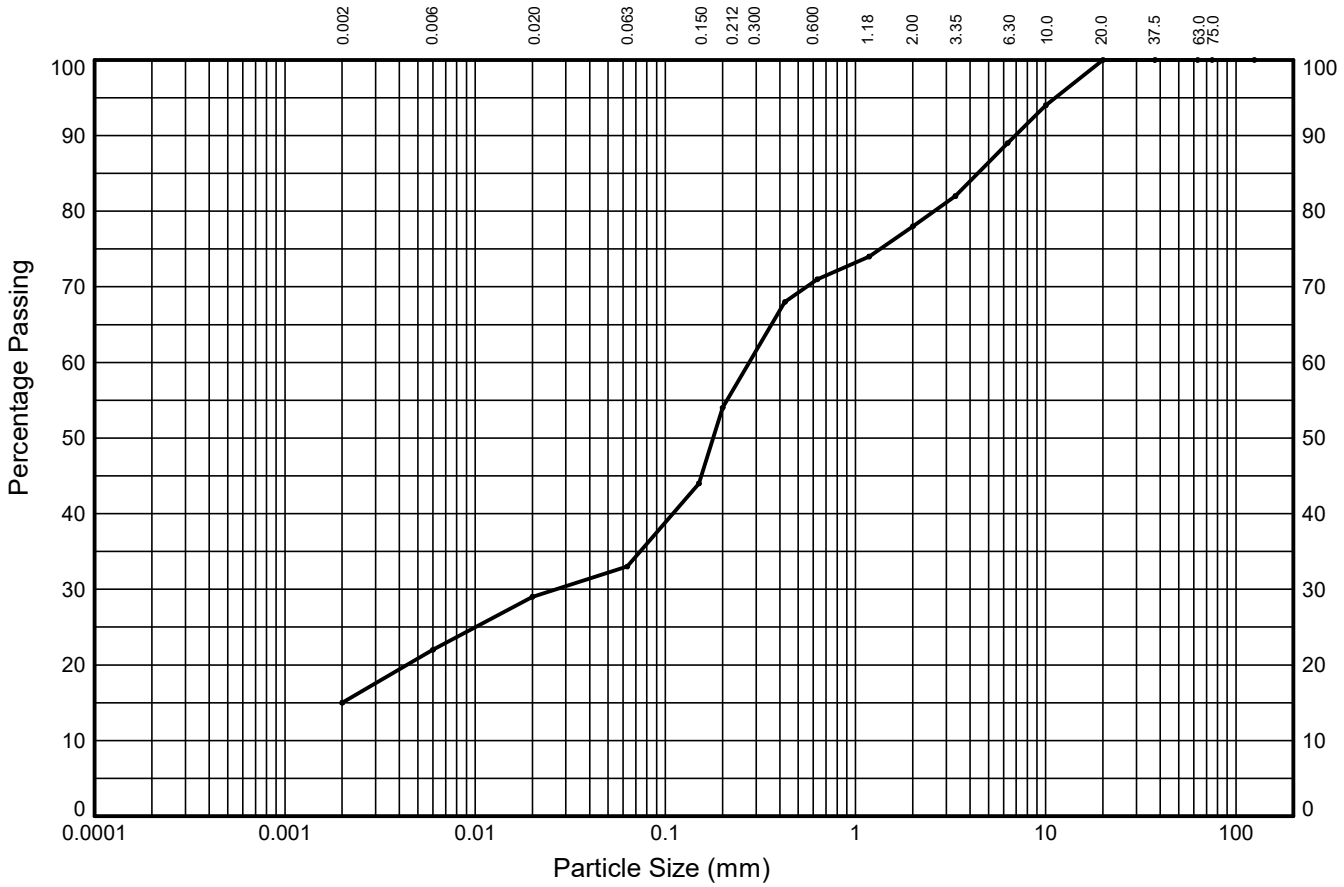
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Borehole: **BH10** Sample Ref: **32** Sample Type: **B** Depth (m): **9.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	7%	7%	4%	21%	17%	7%	11%	11%	0%	
	SILT			SAND			GRAVEL			
15%	18%			45%			22%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**100**
10.0	**94**
6.30	**89**
3.35	**82**
2.00	**78**
1.18	**74**
0.630	**71**
0.425	**68**
0.200	**54**
0.150	**44**
0.063	**33**

Particle Diameter (mm)	Percent Passing (%)
0.02	**29**
0.006	**22**
0.002	**15**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**0.002**
D_{30} (mm)	**0.027**
D_{50} (mm)	**0.178**
D_{60} (mm)	**0.276**
D_{85} (mm)	**4.391**
D_{90} (mm)	**6.910**
C_U	**NA**
C_C	**NA**

Soil Description:

Brown very gravelly very clayey silty SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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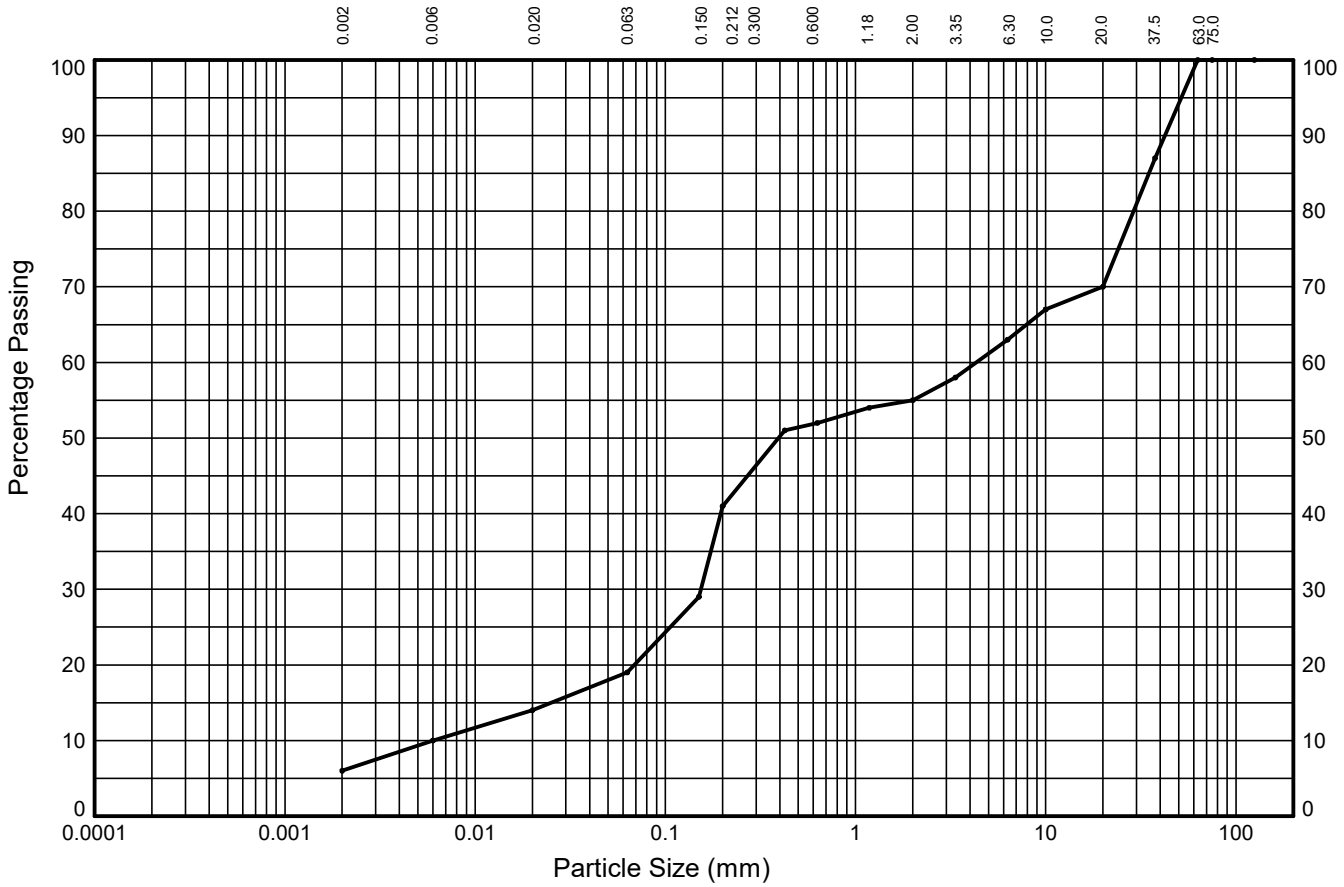
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Borehole: **BH11** Sample Ref: **8** Sample Type: **B** Depth (m): **1.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	4%	4%	5%	22%	11%	3%	8%	7%	30%	
	SILT			SAND			GRAVEL			
6%	13%			36%			45%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**87**
20.0	**70**
10.0	**67**
6.30	**63**
3.35	**58**
2.00	**55**
1.18	**54**
0.630	**52**
0.425	**51**
0.200	**41**
0.150	**29**
0.063	**19**

Particle Diameter (mm)	Percent Passing (%)
0.02	**14**
0.006	**10**
0.002	**6**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.006**
D_{15} (mm)	**0.025**
D_{30} (mm)	**0.154**
D_{50} (mm)	**0.394**
D_{60} (mm)	**4.313**
D_{85} (mm)	**34.827**
D_{90} (mm)	**42.269**
C_U	**719**
C_C	**0.91**

Soil Description:

Brown very sandy silty clayey GRAVEL

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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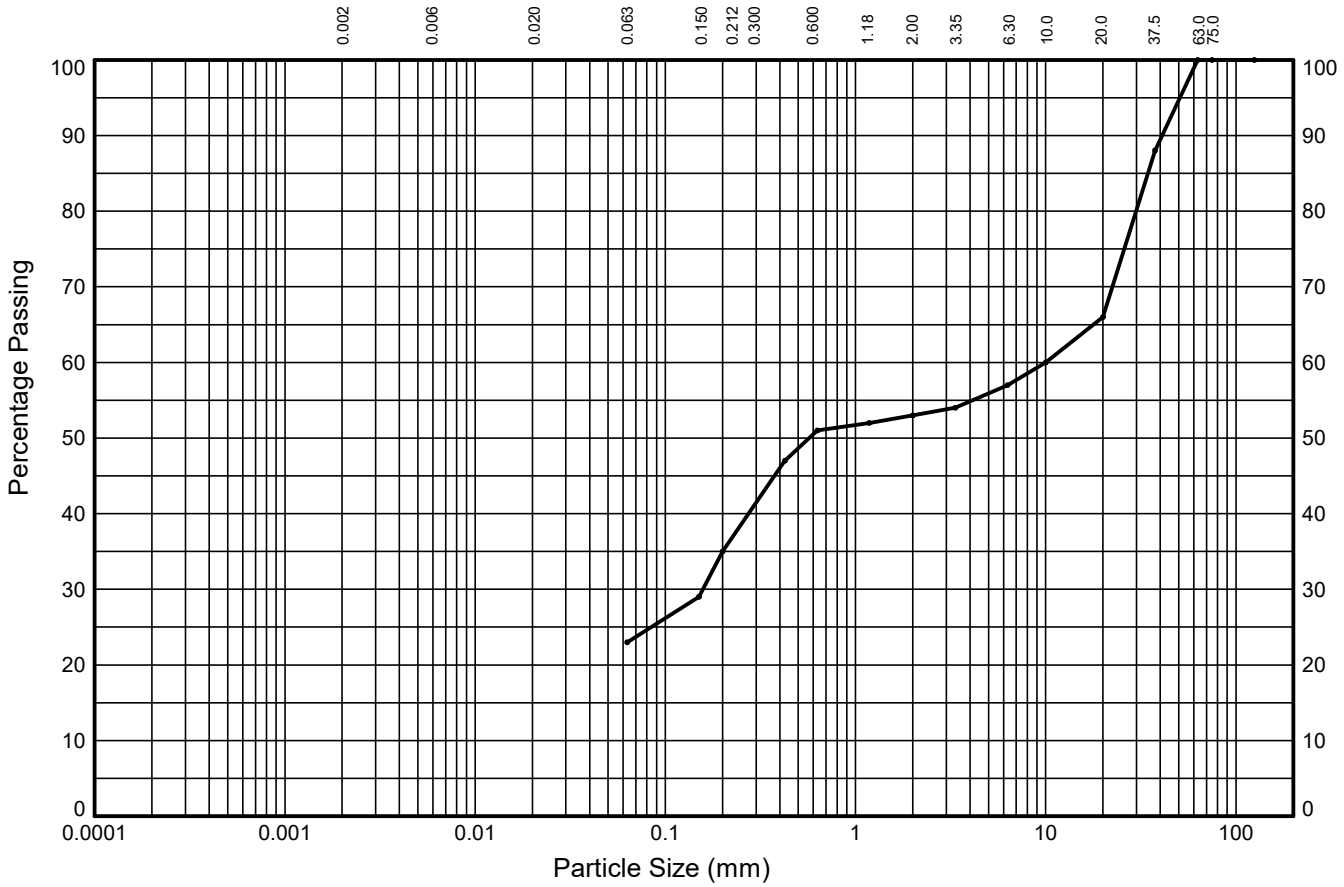
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016

Borehole: **BH11** Sample Ref: **20** Sample Type: **B** Depth (m): **4.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	12%	16%	2%	4%	9%	34%	
	SILT			SAND			GRAVEL			
23%				30%			47%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**88**
20.0	**66**
10.0	**60**
6.30	**57**
3.35	**54**
2.00	**53**
1.18	**52**
0.630	**51**
0.425	**47**
0.200	**35**
0.150	**29**
0.063	**23**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**NA**
D_{30} (mm)	**0.157**
D_{50} (mm)	**0.571**
D_{60} (mm)	**10.000**
D_{85} (mm)	**34.419**
D_{90} (mm)	**40.887**
C_U	**NA**
C_C	**NA**

Soil Description:

Brown very sandy very clayey GRAVEL

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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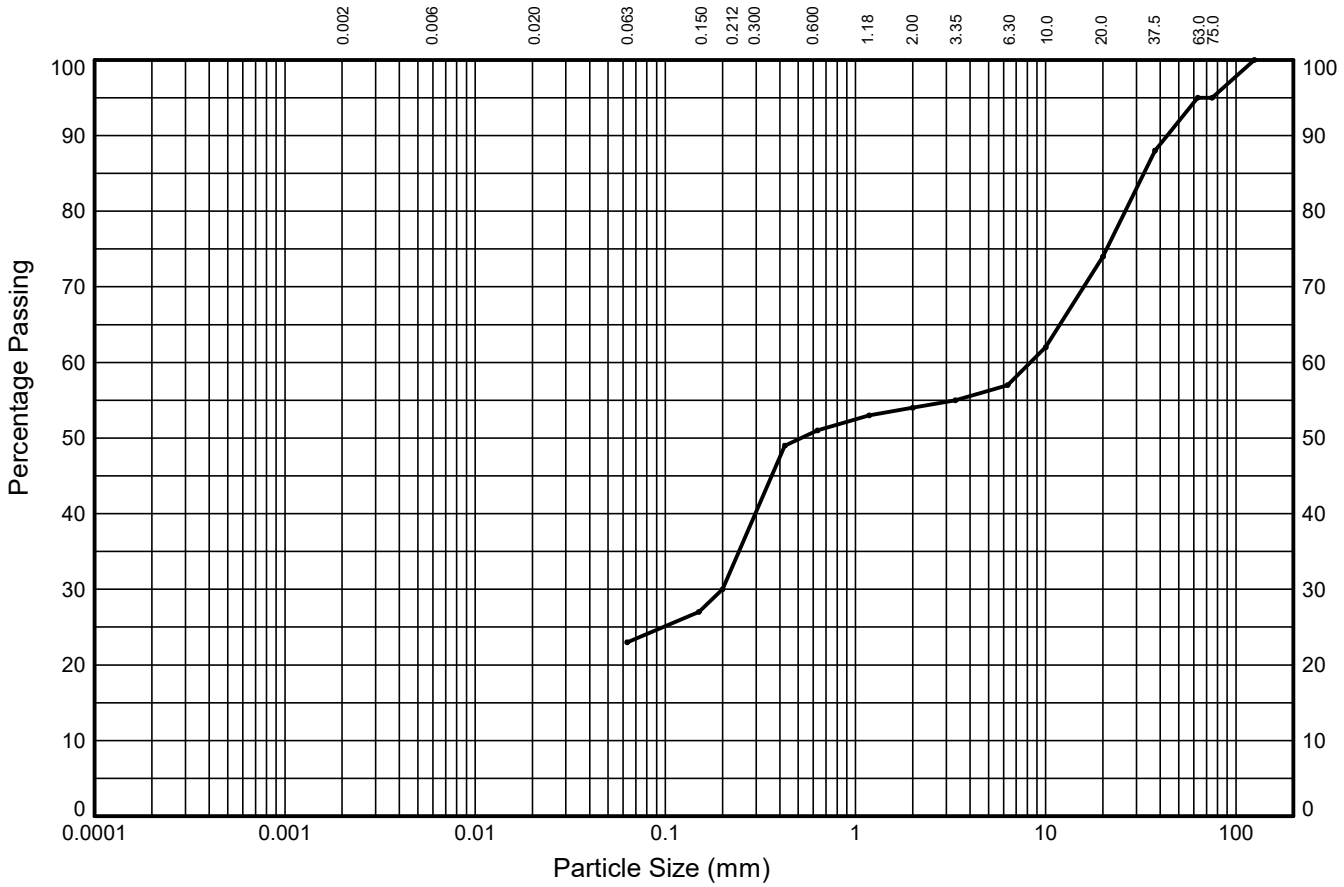
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016

Borehole: **BH11** Sample Ref: **30** Sample Type: **B** Depth (m): **7.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	7%	21%	3%	3%	17%	21%	
	SILT			SAND			GRAVEL			
23%				31%			41%			5%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**95**
63.0	**95**
37.5	**88**
20.0	**74**
10.0	**62**
6.30	**57**
3.35	**55**
2.00	**54**
1.18	**53**
0.630	**51**
0.425	**49**
0.200	**30**
0.150	**27**
0.063	**23**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**NA**
D_{30} (mm)	**0.200**
D_{50} (mm)	**0.517**
D_{60} (mm)	**8.313**
D_{85} (mm)	**32.774**
D_{90} (mm)	**43.492**
C_U	**NA**
C_C	**NA**

Soil Description:

Brown very sandy very clayey GRAVEL with medium cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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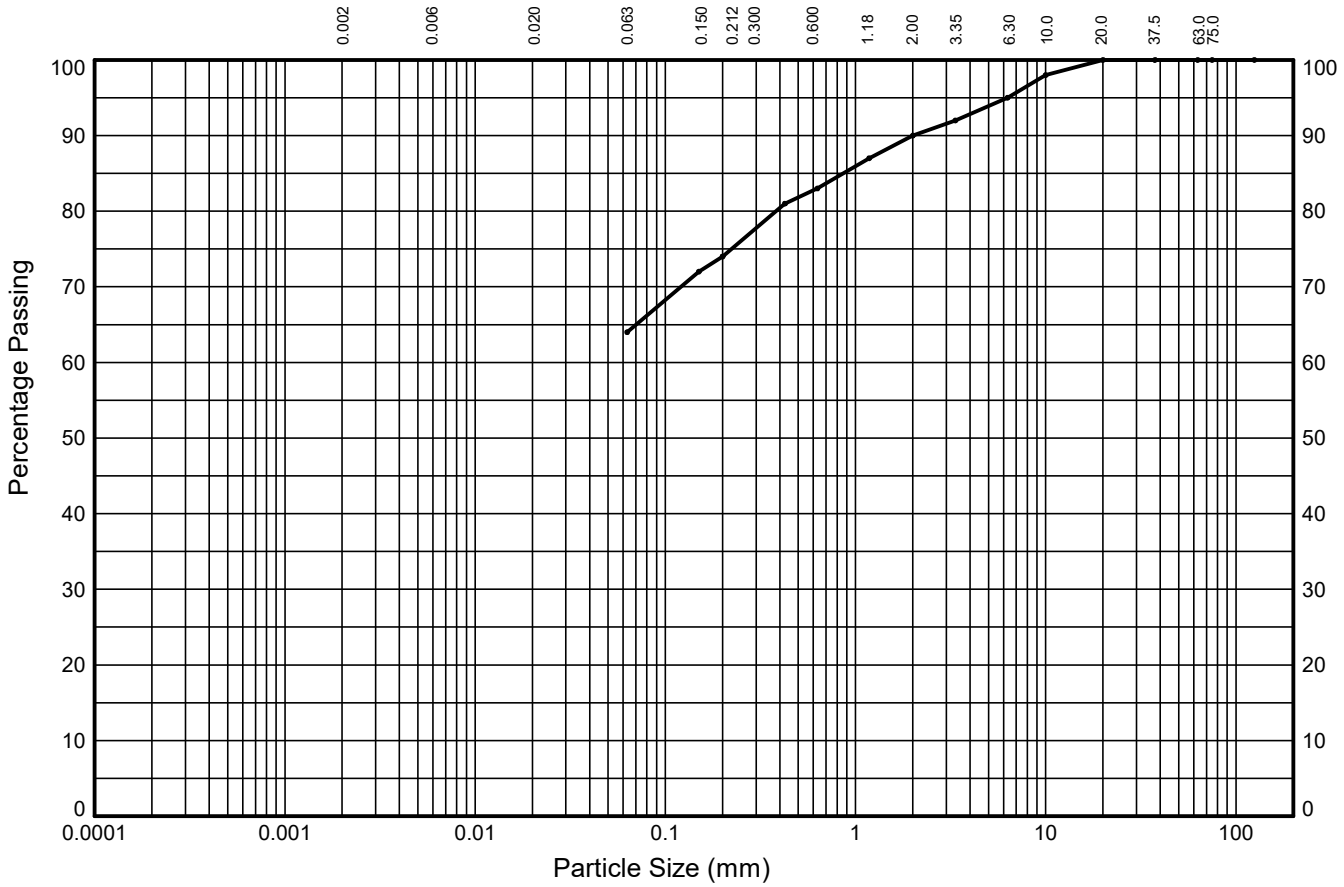
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016

Borehole: **BH11** Sample Ref: **36** Sample Type: **B** Depth (m): **9.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	10%	9%	7%	5%	5%	0%	
	SILT			SAND			GRAVEL			
64%				26%			10%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**100**
10.0	**98**
6.30	**95**
3.35	**92**
2.00	**90**
1.18	**87**
0.630	**83**
0.425	**81**
0.200	**74**
0.150	**72**
0.063	**64**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**NA**
D_{30} (mm)	**NA**
D_{50} (mm)	**NA**
D_{60} (mm)	**NA**
D_{85} (mm)	**0.862**
D_{90} (mm)	**2.000**
C_U	**NA**
C_C	**NA**

Soil Description:

Dark brown grey slightly gravelly slightly sandy CLAY

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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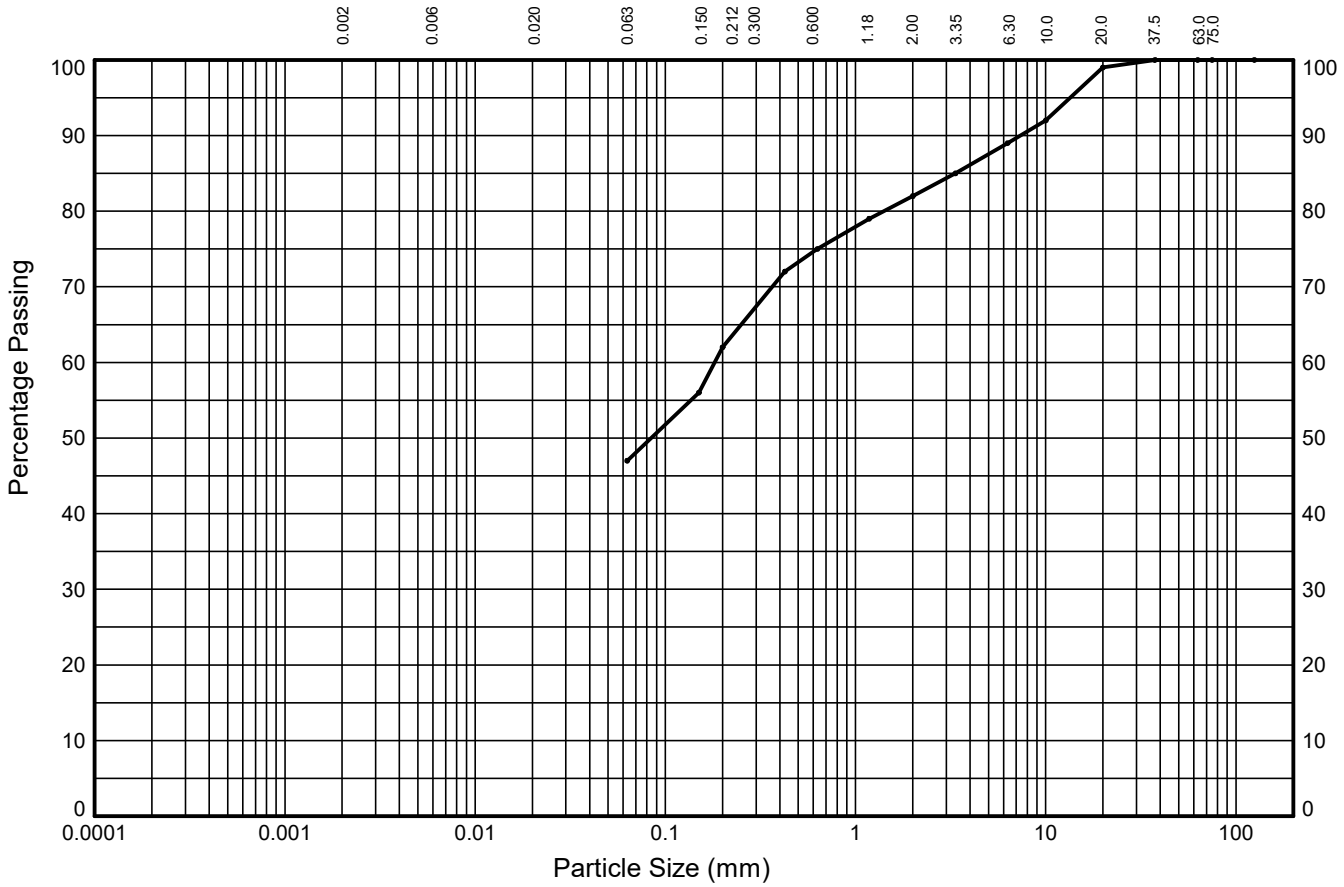
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016

Borehole: **BH12** Sample Ref: **3** Sample Type: **B** Depth (m): **0.70**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	15%	13%	7%	7%	10%	1%	
	SILT			SAND			GRAVEL			
47%				35%			18%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**99**
10.0	**92**
6.30	**89**
3.35	**85**
2.00	**82**
1.18	**79**
0.630	**75**
0.425	**72**
0.200	**62**
0.150	**56**
0.063	**47**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**NA**
D_{30} (mm)	**NA**
D_{50} (mm)	**0.084**
D_{60} (mm)	**0.182**
D_{85} (mm)	**3.350**
D_{90} (mm)	**7.349**
C_U	**NA**
C_C	**NA**

Soil Description:

Brown slightly gravelly slightly sandy CLAY

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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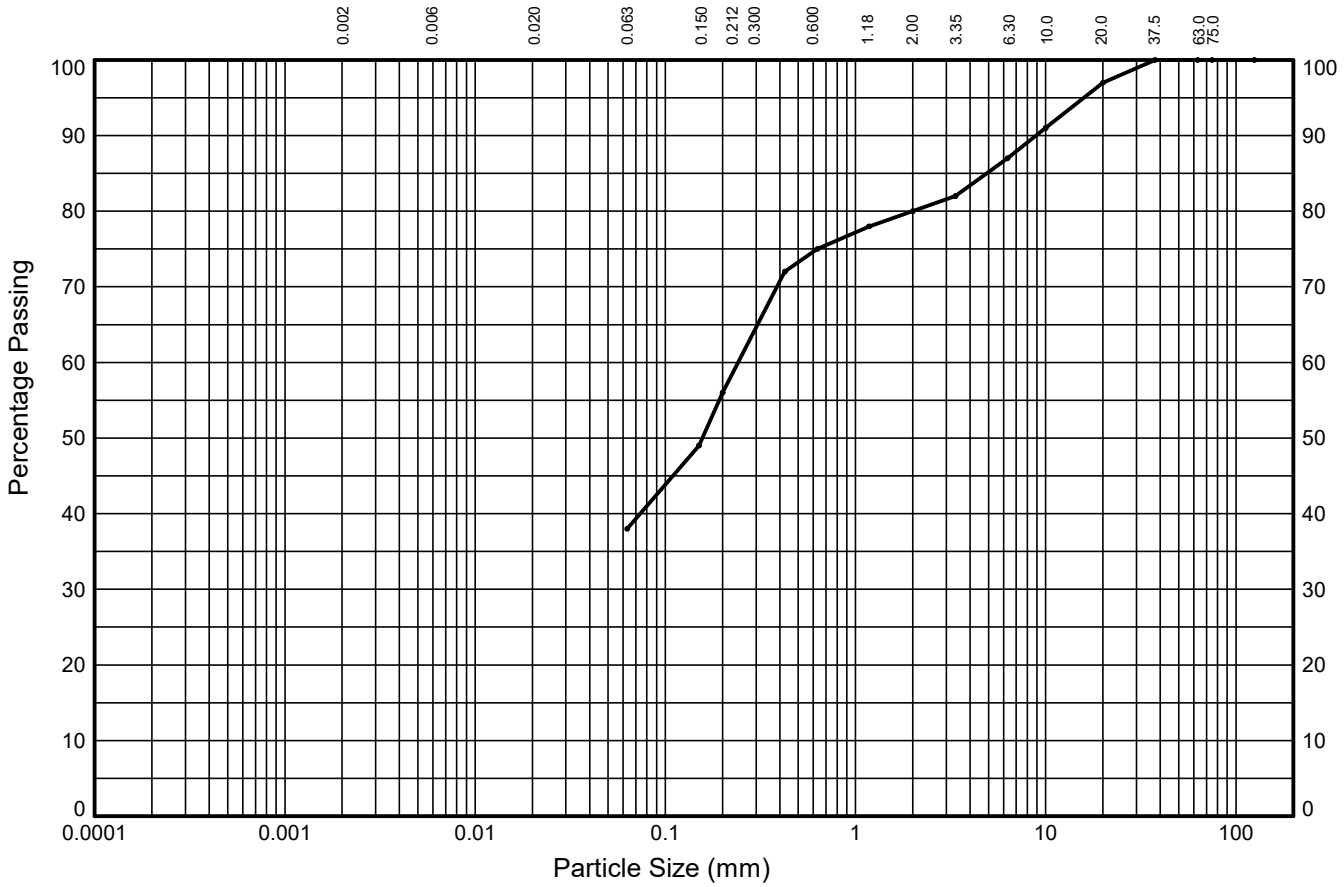
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016

Borehole: **BH13** Sample Ref: **4** Sample Type: **B** Depth (m): **0.65**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	18%	19%	5%	7%	10%	3%	
	SILT			SAND			GRAVEL			
38%				42%			20%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**97**
10.0	**91**
6.30	**87**
3.35	**82**
2.00	**80**
1.18	**78**
0.630	**75**
0.425	**72**
0.200	**56**
0.150	**49**
0.063	**38**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**NA**
D_{30} (mm)	**NA**
D_{50} (mm)	**0.156**
D_{60} (mm)	**0.241**
D_{85} (mm)	**4.894**
D_{90} (mm)	**8.909**
C_U	**NA**
C_C	**NA**

Soil Description:

Dark brown slightly gravelly sandy CLAY

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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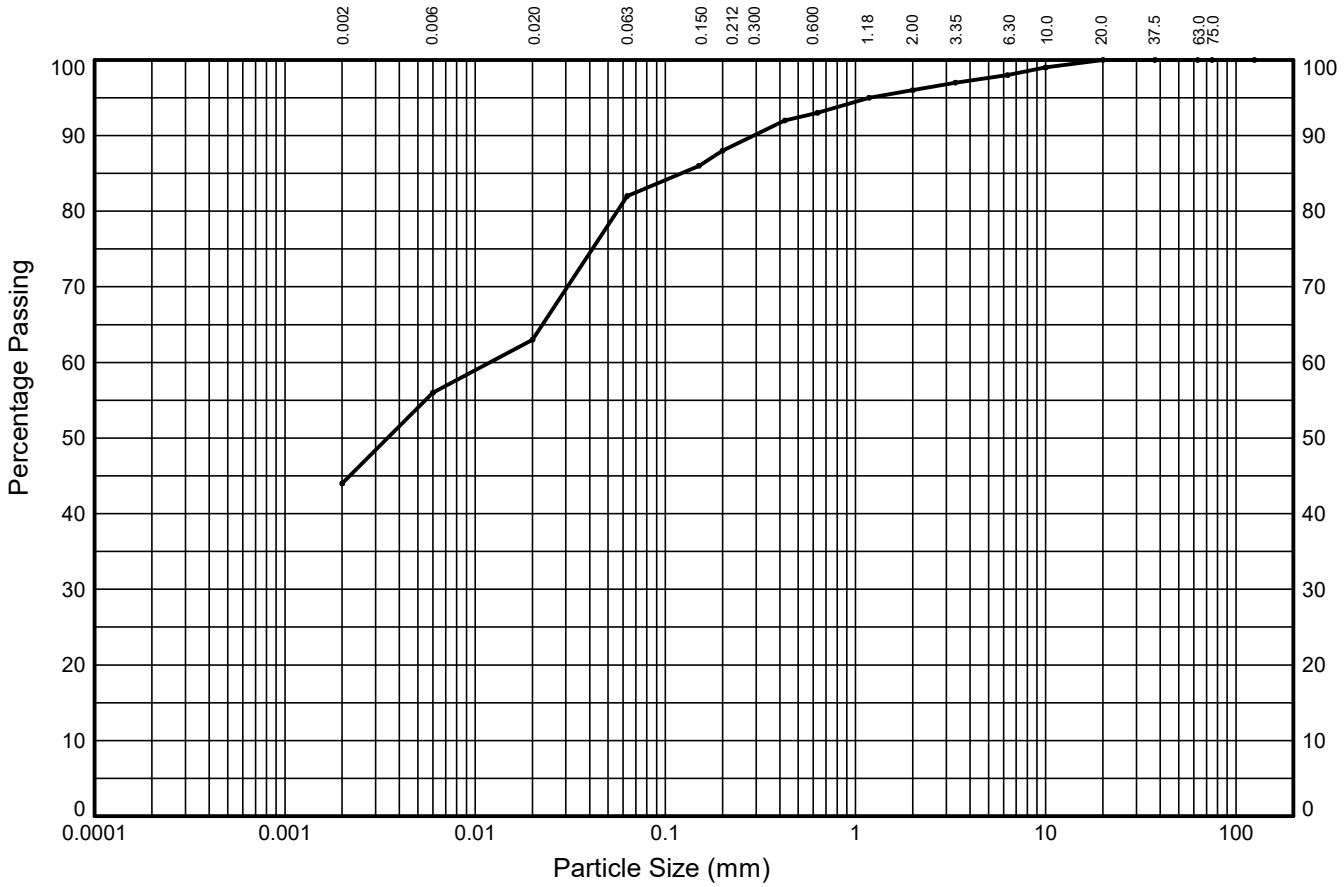
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Borehole: **BH13** Sample Ref: **6** Sample Type: **B** Depth (m): **1.20**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	12%	7%	19%	6%	5%	3%	2%	2%	0%	
	SILT			SAND			GRAVEL			
44%	38%			14%			4%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**100**
10.0	**99**
6.30	**98**
3.35	**97**
2.00	**96**
1.18	**95**
0.630	**93**
0.425	**92**
0.200	**88**
0.150	**86**
0.063	**82**

Particle Diameter (mm)	Percent Passing (%)
0.02	**63**
0.006	**56**
0.002	**44**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**NA**
D_{30} (mm)	**NA**
D_{50} (mm)	**0.003**
D_{60} (mm)	**0.012**
D_{85} (mm)	**0.121**
D_{90} (mm)	**0.292**
C_U	**NA**
C_C	**NA**

Soil Description:

Brown slightly gravelly slightly sandy silty CLAY

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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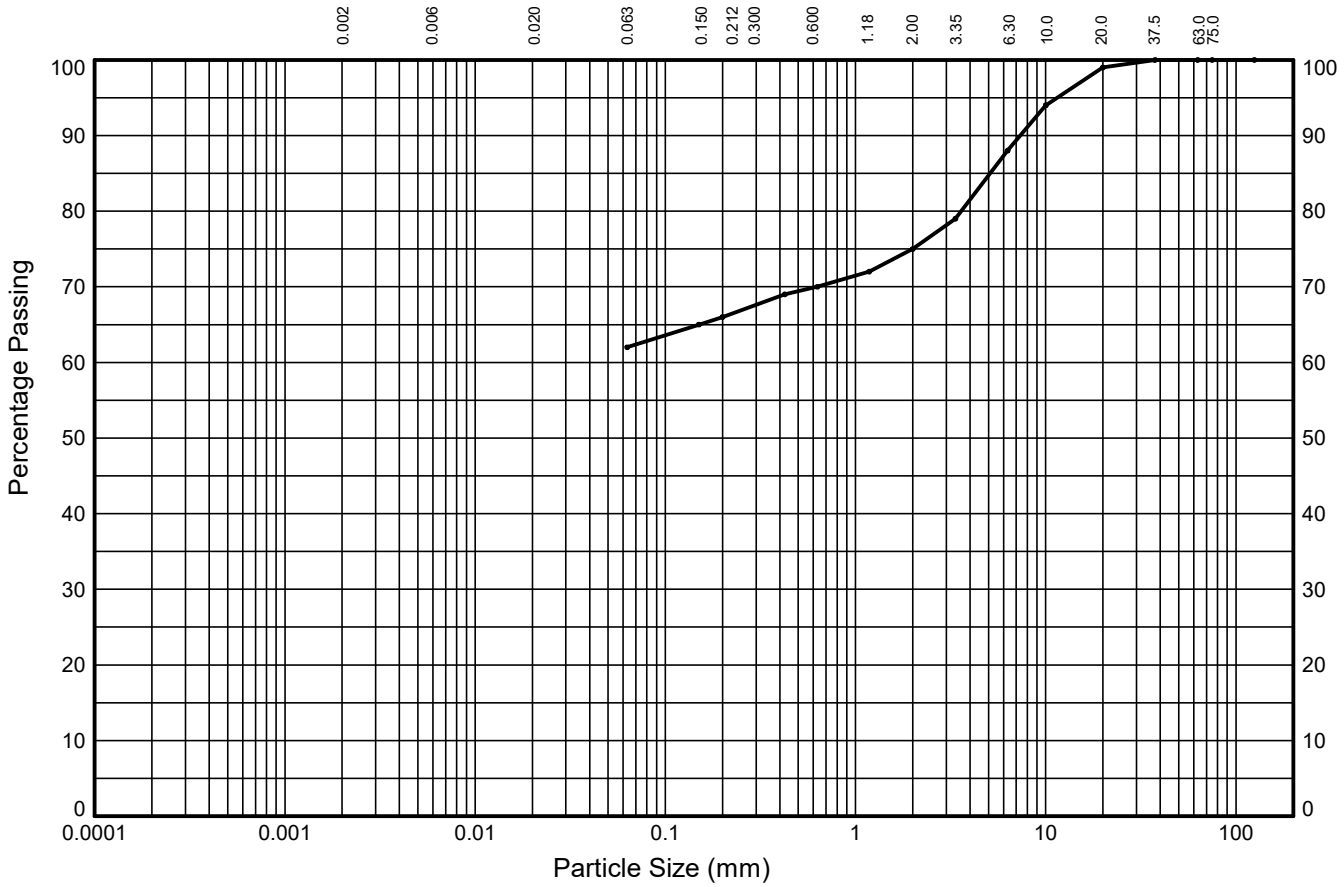
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016

Borehole: **BH14** Sample Ref: **7** Sample Type: **B** Depth (m): **1.30**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	4%	4%	5%	13%	11%	1%	
	SILT			SAND			GRAVEL			
62%				13%			25%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**99**
10.0	**94**
6.30	**88**
3.35	**79**
2.00	**75**
1.18	**72**
0.630	**70**
0.425	**69**
0.200	**66**
0.150	**65**
0.063	**62**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**NA**
D_{30} (mm)	**NA**
D_{50} (mm)	**NA**
D_{60} (mm)	**NA**
D_{85} (mm)	**5.104**
D_{90} (mm)	**7.349**
C_U	**NA**
C_C	**NA**

Soil Description:

Brown slightly sandy slightly gravelly CLAY

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Contract	Contract Ref:
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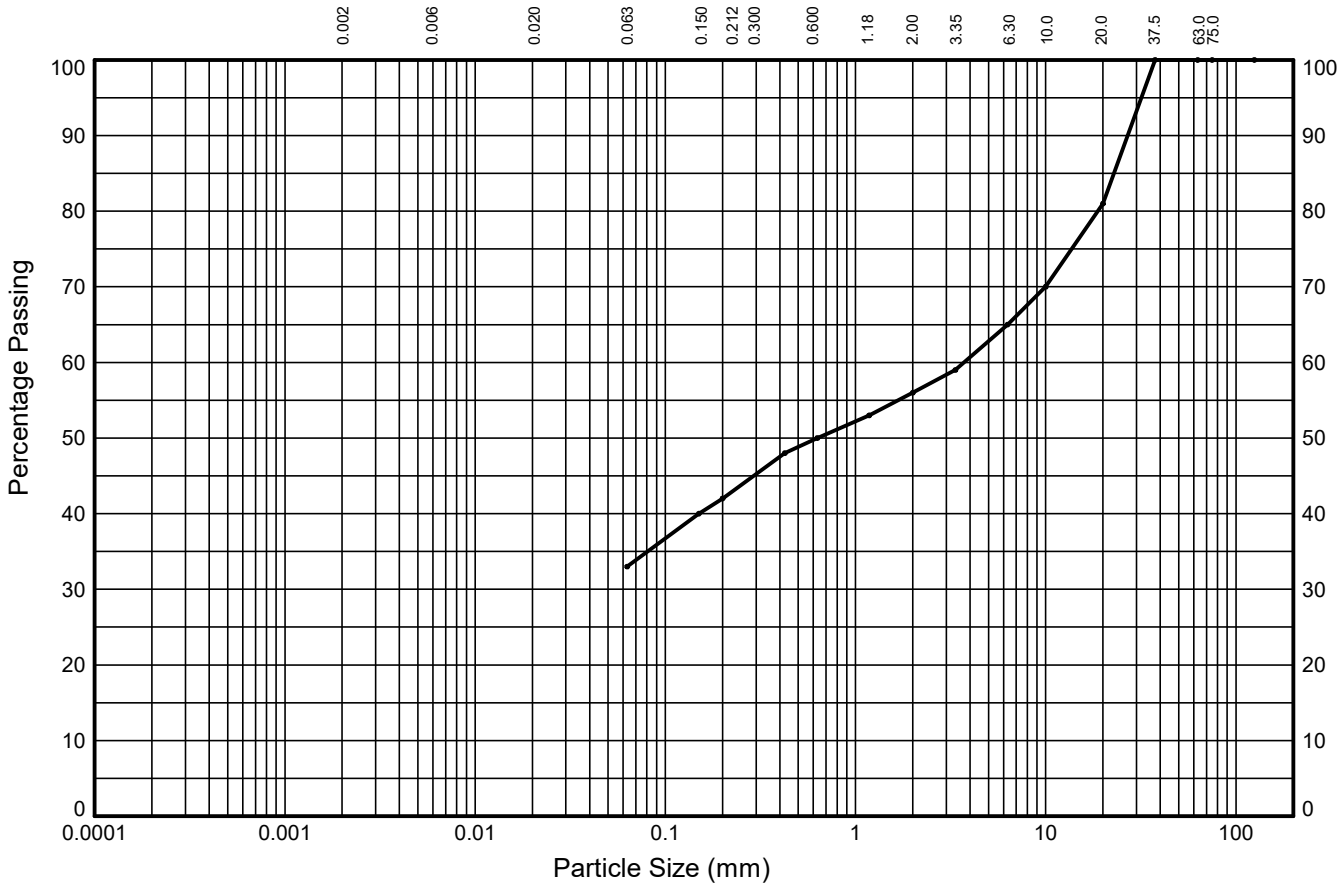
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016

Borehole: **BH14A** Sample Ref: **2** Sample Type: **B** Depth (m): **0.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	9%	8%	6%	9%	16%	19%	
	SILT			SAND			GRAVEL			
33%				23%			44%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**81**
10.0	**70**
6.30	**65**
3.35	**59**
2.00	**56**
1.18	**53**
0.630	**50**
0.425	**48**
0.200	**42**
0.150	**40**
0.063	**33**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**NA**
D_{30} (mm)	**NA**
D_{50} (mm)	**0.630**
D_{60} (mm)	**3.722**
D_{85} (mm)	**22.830**
D_{90} (mm)	**26.937**
C_U	**NA**
C_C	**NA**

Soil Description:

Brown very sandy very clayey GRAVEL

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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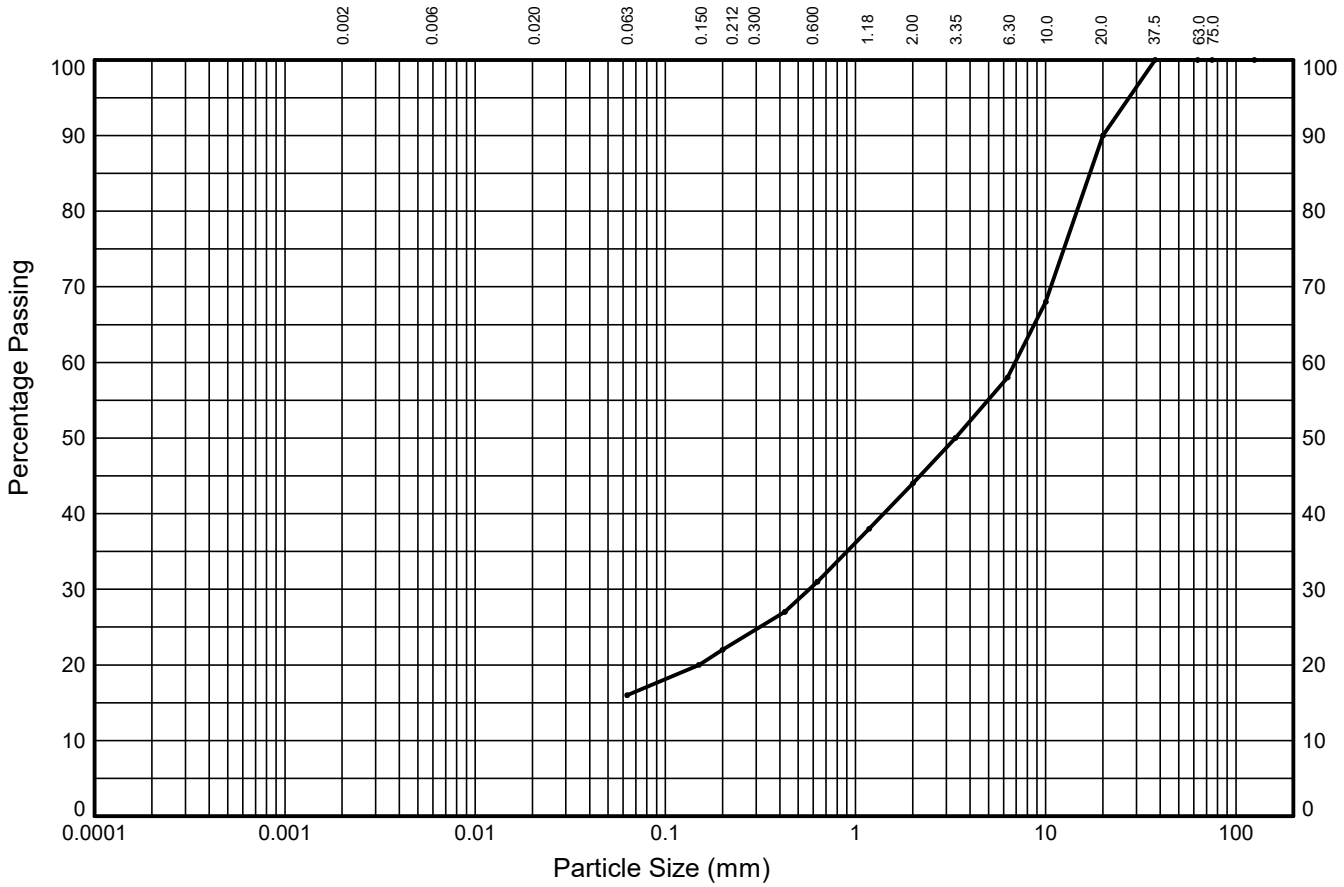
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016

Borehole: **BH15** Sample Ref: **4** Sample Type: **B** Depth (m): **1.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	6%	9%	13%	14%	32%	10%	
	SILT			SAND			GRAVEL			
16%				28%			56%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**90**
10.0	**68**
6.30	**58**
3.35	**50**
2.00	**44**
1.18	**38**
0.630	**31**
0.425	**27**
0.200	**22**
0.150	**20**
0.063	**16**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**NA**
D_{30} (mm)	**0.571**
D_{50} (mm)	**3.350**
D_{60} (mm)	**6.910**
D_{85} (mm)	**17.085**
D_{90} (mm)	**20.000**
C_U	**NA**
C_C	**NA**

Soil Description:

Brown very sandy clayey GRAVEL

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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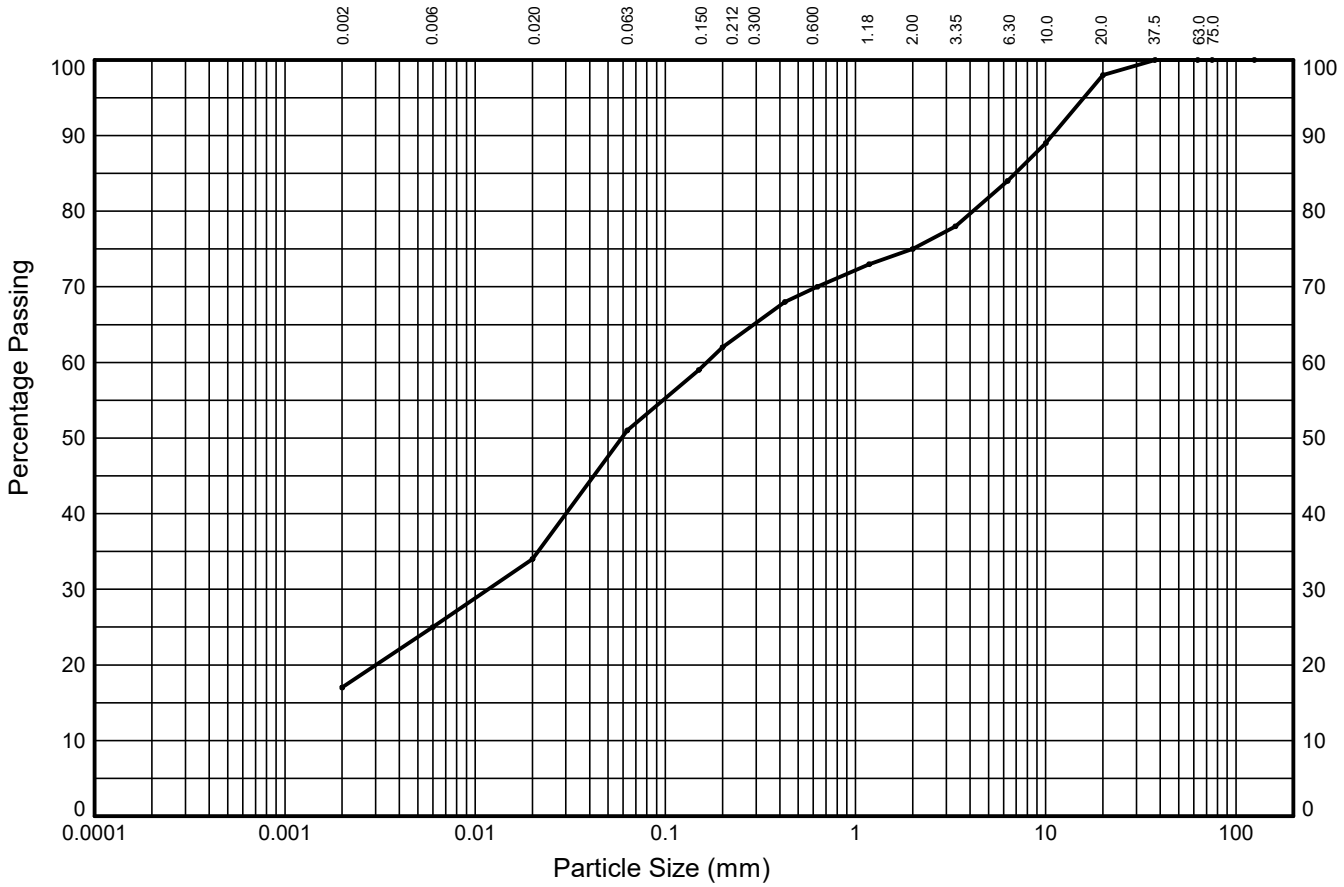
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Borehole: **BH15** Sample Ref: **10** Sample Type: **B** Depth (m): **4.20**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	8%	9%	17%	11%	8%	5%	9%	14%	2%	
	SILT			SAND			GRAVEL			
17%	34%			24%			25%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**98**
10.0	**89**
6.30	**84**
3.35	**78**
2.00	**75**
1.18	**73**
0.630	**70**
0.425	**68**
0.200	**62**
0.150	**59**
0.063	**51**

Particle Diameter (mm)	Percent Passing (%)
0.02	**34**
0.006	**25**
0.002	**17**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**NA**
D_{30} (mm)	**0.012**
D_{50} (mm)	**0.059**
D_{60} (mm)	**0.165**
D_{85} (mm)	**6.910**
D_{90} (mm)	**10.801**
C_U	**NA**
C_C	**NA**

Soil Description:

Brown slightly gravelly slightly sandy silty CLAY

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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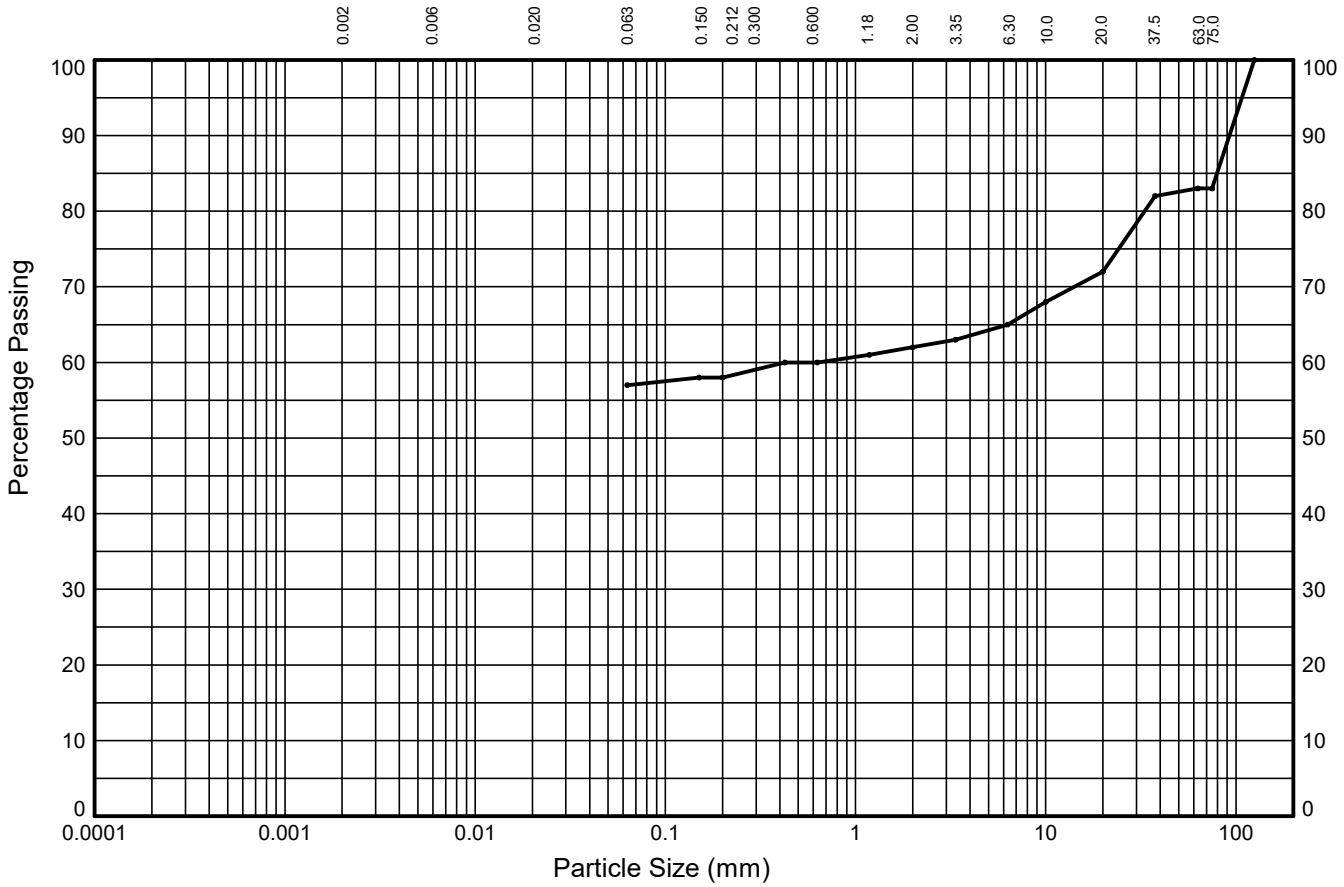
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016

Borehole: **BH16** Sample Ref: **3** Sample Type: **B** Depth (m): **1.00**



CLAY										
	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	1%	2%	2%	3%	7%	11%	
	SILT			SAND			GRAVEL			
57%				5%			21%			17%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**83**
63.0	**83**
37.5	**82**
20.0	**72**
10.0	**68**
6.30	**65**
3.35	**63**
2.00	**62**
1.18	**61**
0.630	**60**
0.425	**60**
0.200	**58**
0.150	**58**
0.063	**57**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**NA**
D_{30} (mm)	**NA**
D_{50} (mm)	**NA**
D_{60} (mm)	**0.425**
D_{85} (mm)	**79.645**
D_{90} (mm)	**92.557**
C_U	**NA**
C_C	**NA**

Soil Description:

Brown slightly sandy slightly gravelly CLAY with medium cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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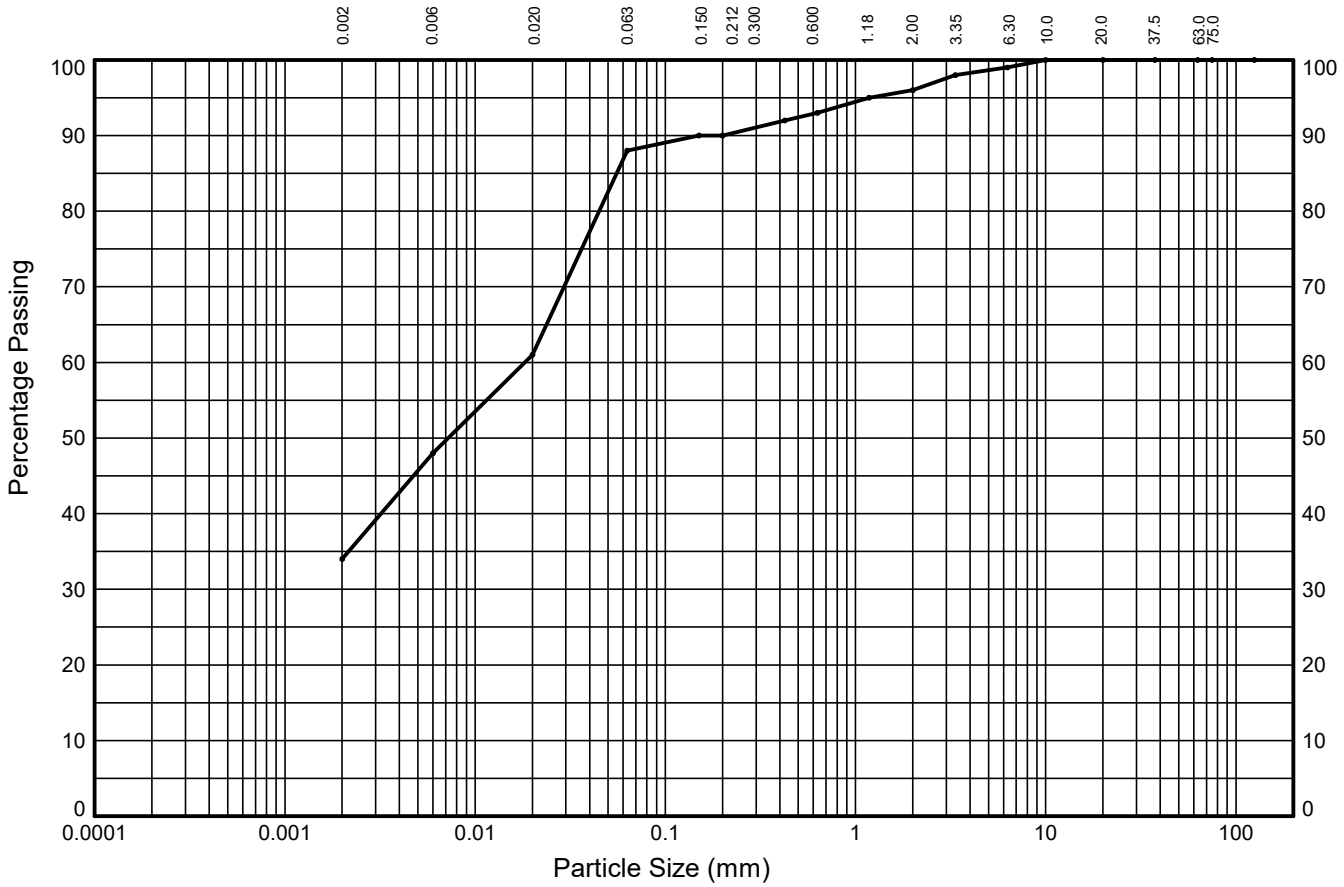
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Borehole: **BH16** Sample Ref: **5** Sample Type: **B** Depth (m): **2.45**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	14%	13%	27%	2%	3%	3%	3%	1%	0%	
	SILT			SAND			GRAVEL			
34%	54%			8%			4%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**100**
10.0	**100**
6.30	**99**
3.35	**98**
2.00	**96**
1.18	**95**
0.630	**93**
0.425	**92**
0.200	**90**
0.150	**90**
0.063	**88**

Particle Diameter (mm)	Percent Passing (%)
0.02	**61**
0.006	**48**
0.002	**34**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**NA**
D_{30} (mm)	**NA**
D_{50} (mm)	**0.007**
D_{60} (mm)	**0.018**
D_{85} (mm)	**0.055**
D_{90} (mm)	**0.150**
C_U	**NA**
C_C	**NA**

Soil Description:

Brown slightly gravelly slightly sandy silty CLAY

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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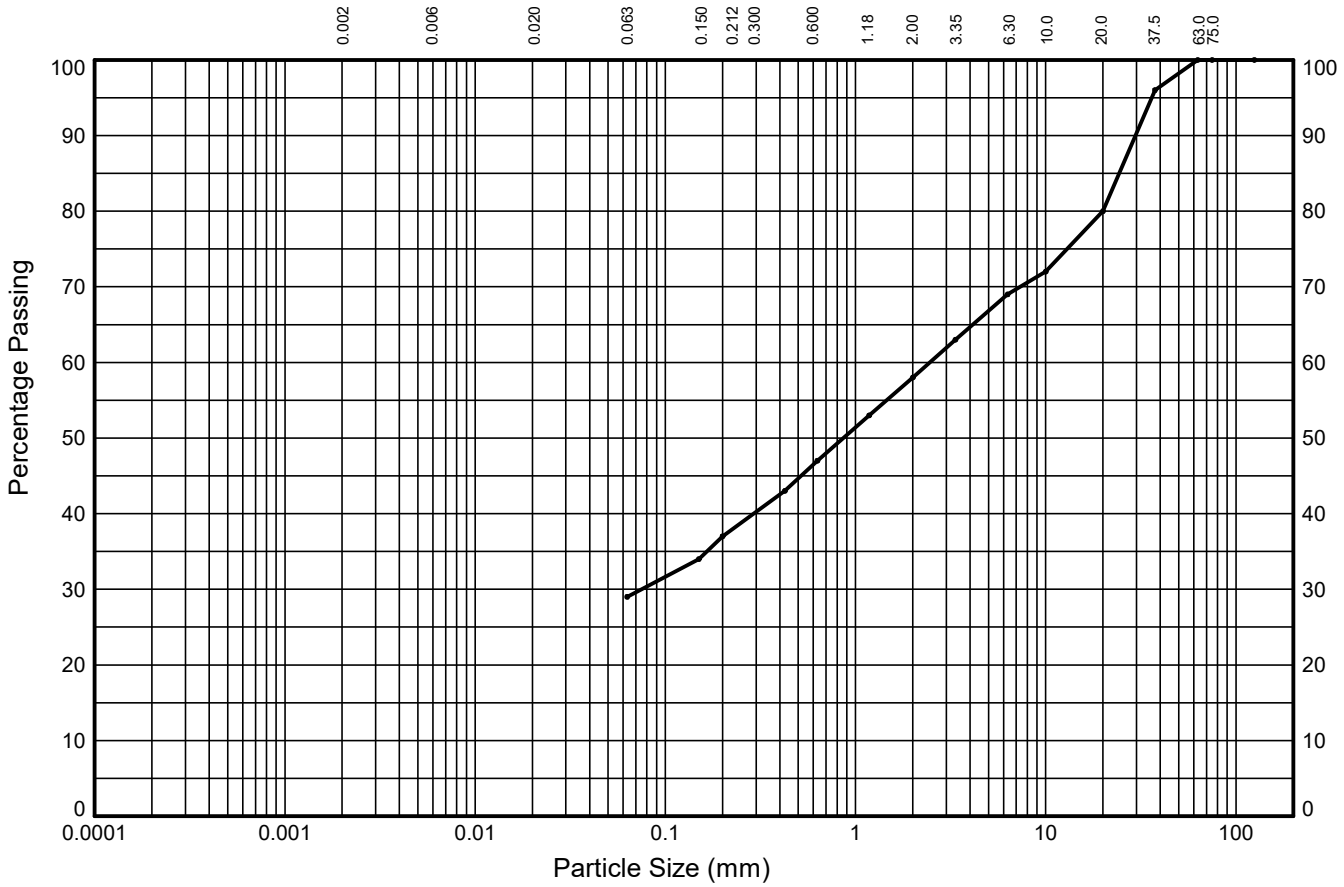
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Window Sample: **WS05** Sample Ref: **4** Sample Type: **B** Depth (m): **0.40**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	8%	10%	11%	11%	11%	20%	
	SILT			SAND			GRAVEL			
29%				29%			42%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**96**
20.0	**80**
10.0	**72**
6.30	**69**
3.35	**63**
2.00	**58**
1.18	**53**
0.630	**47**
0.425	**43**
0.200	**37**
0.150	**34**
0.063	**29**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**NA**
D_{30} (mm)	**0.075**
D_{50} (mm)	**0.862**
D_{60} (mm)	**2.458**
D_{85} (mm)	**24.341**
D_{90} (mm)	**29.625**
C_U	**NA**
C_C	**NA**

Soil Description:

Brown very sandy very silty GRAVEL

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Francesca Bennett	**FRANCESCA BENNETT**	**10/12/24**

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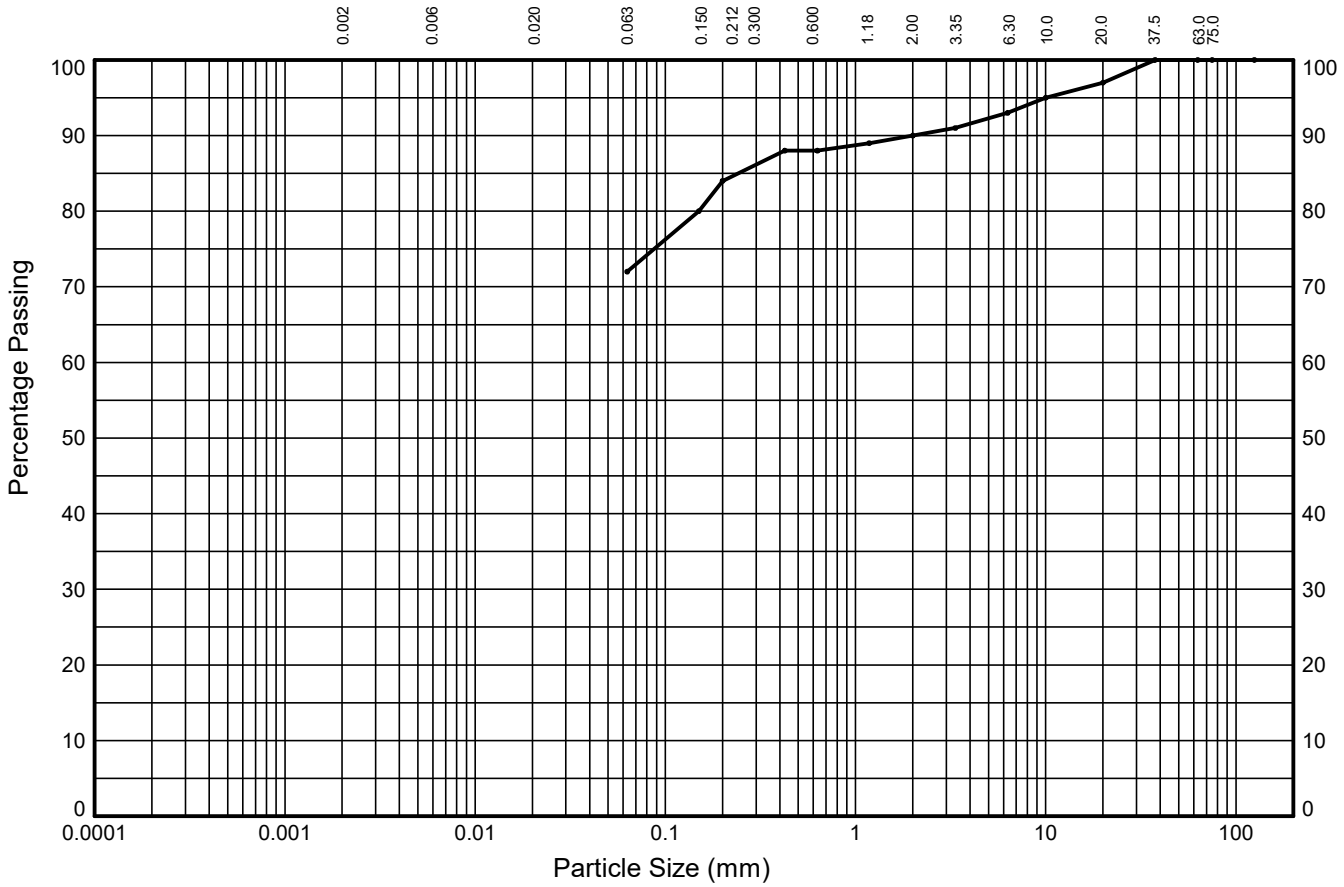
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016

Window Sample: **WS05** Sample Ref: **12** Sample Type: **B** Depth (m): **3.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	12%	4%	2%	3%	4%	3%	
	SILT			SAND			GRAVEL			
72%				18%			10%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**97**
10.0	**95**
6.30	**93**
3.35	**91**
2.00	**90**
1.18	**89**
0.630	**88**
0.425	**88**
0.200	**84**
0.150	**80**
0.063	**72**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**NA**
D_{30} (mm)	**NA**
D_{50} (mm)	**NA**
D_{60} (mm)	**NA**
D_{85} (mm)	**0.241**
D_{90} (mm)	**2.000**
C_U	**NA**
C_C	**NA**

Soil Description:

Brown slightly gravelly slightly sandy organic CLAY

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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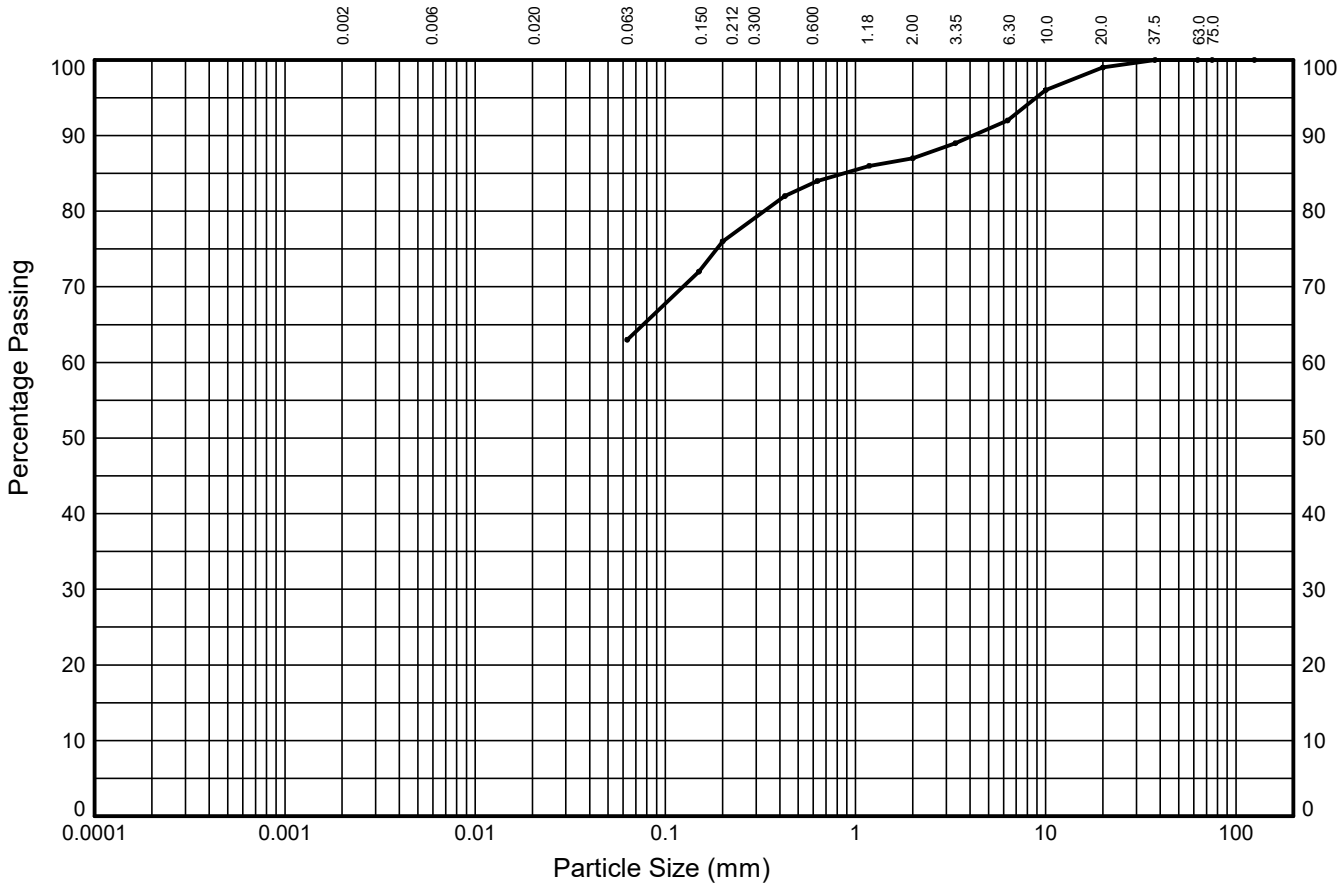
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016

Window Sample: **WS06** Sample Ref: **11** Sample Type: **B** Depth (m): **2.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	13%	8%	3%	5%	7%	1%	
	SILT			SAND			GRAVEL			
63%				24%			13%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**99**
10.0	**96**
6.30	**92**
3.35	**89**
2.00	**87**
1.18	**86**
0.630	**84**
0.425	**82**
0.200	**76**
0.150	**72**
0.063	**63**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**NA**
D_{30} (mm)	**NA**
D_{50} (mm)	**NA**
D_{60} (mm)	**NA**
D_{85} (mm)	**0.862**
D_{90} (mm)	**4.135**
C_U	**NA**
C_C	**NA**

Soil Description:

Brown slightly gravelly slightly sandy silty CLAY

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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The Potteries
Pottery Street
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Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**10/12/24**

Contract	Contract Ref:
A635 Barnsley Bus RapidTransit Route	**765865**

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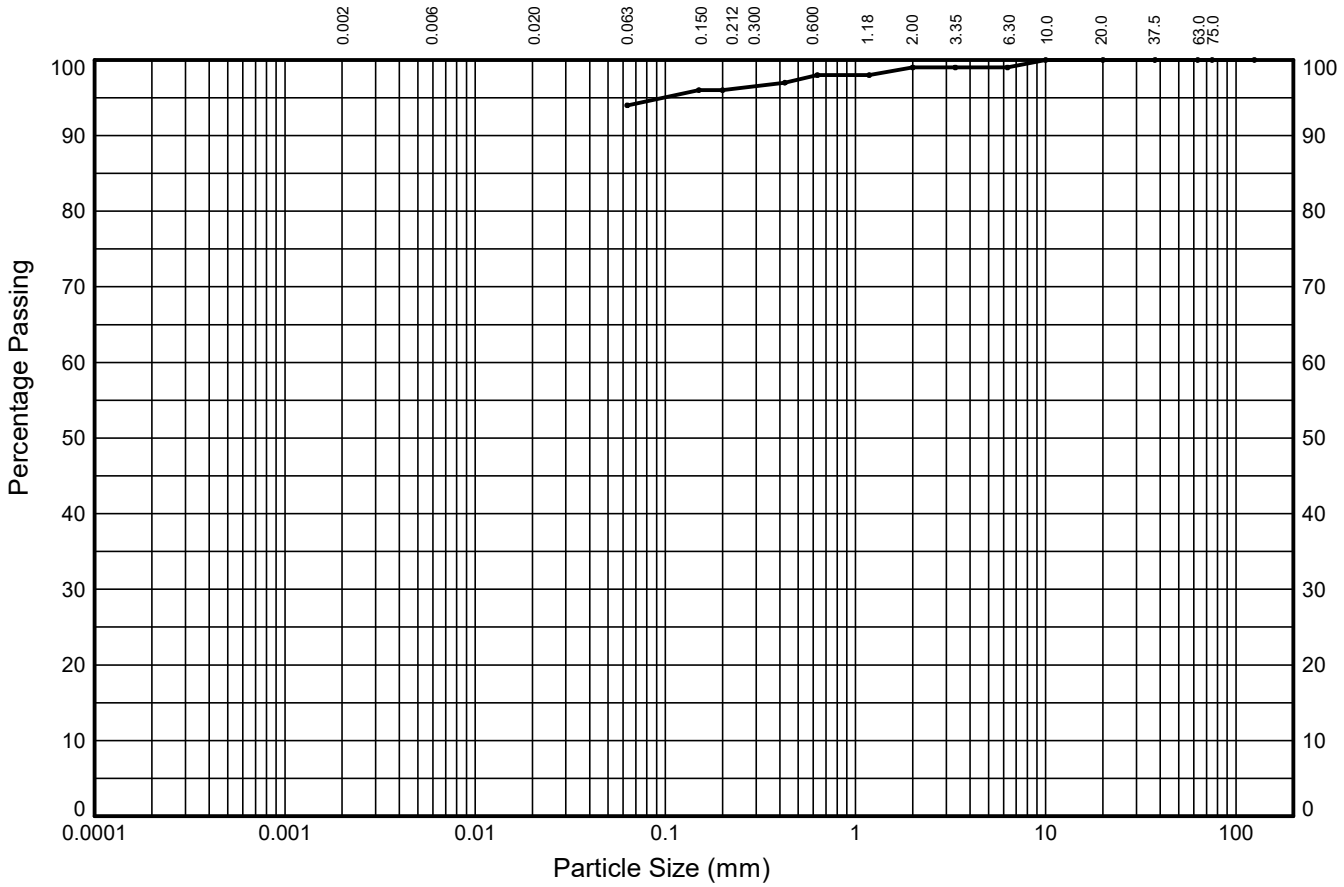
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016

Window Sample: **WS07** Sample Ref: **8** Sample Type: **B** Depth (m): **2.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	2%	2%	1%	0%	1%	0%	
	SILT			SAND			GRAVEL			
94%				5%			1%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**100**
10.0	**100**
6.30	**99**
3.35	**99**
2.00	**99**
1.18	**98**
0.630	**98**
0.425	**97**
0.200	**96**
0.150	**96**
0.063	**94**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**NA**
D_{30} (mm)	**NA**
D_{50} (mm)	**NA**
D_{60} (mm)	**NA**
D_{85} (mm)	**NA**
D_{90} (mm)	**NA**
C_U	**NA**
C_C	**NA**

Soil Description:

Brown mottled grey slightly gravelly slightly sandy CLAY

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Contract	Contract Ref:
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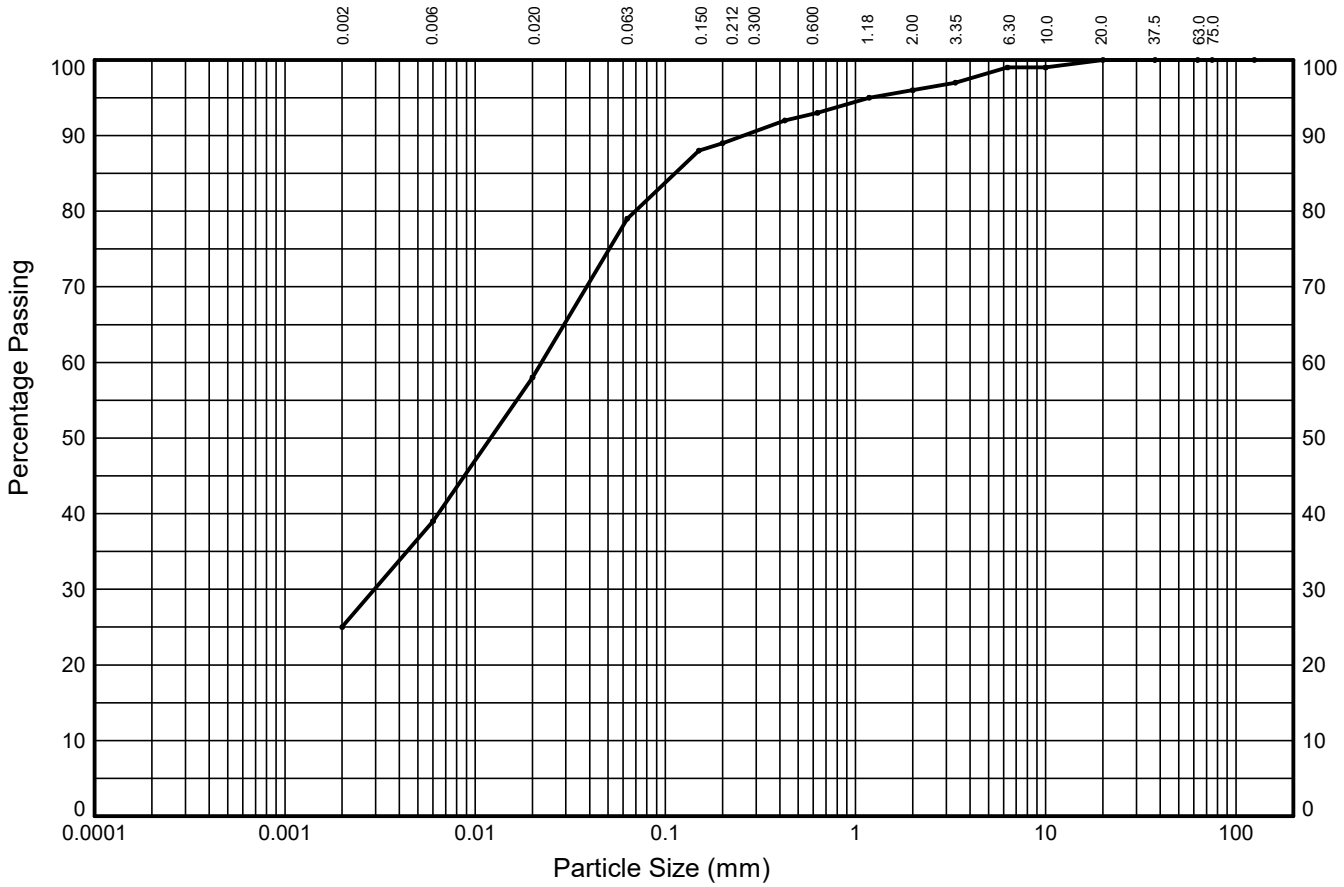
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Window Sample: **WS10** Sample Ref: **7** Sample Type: **B** Depth (m): **1.40**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	14%	19%	21%	10%	4%	3%	3%	1%	0%	
	SILT			SAND			GRAVEL			
25%	54%			17%			4%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**100**
10.0	**99**
6.30	**99**
3.35	**97**
2.00	**96**
1.18	**95**
0.630	**93**
0.425	**92**
0.200	**89**
0.150	**88**
0.063	**79**

Particle Diameter (mm)	Percent Passing (%)
0.02	**58**
0.006	**39**
0.002	**25**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**NA**
D_{30} (mm)	**0.003**
D_{50} (mm)	**0.012**
D_{60} (mm)	**0.022**
D_{85} (mm)	**0.112**
D_{90} (mm)	**0.257**
C_U	**NA**
C_C	**NA**

Soil Description:

Brown mottled grey slightly gravelly slightly sandy silty CLAY

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Contract	Contract Ref:
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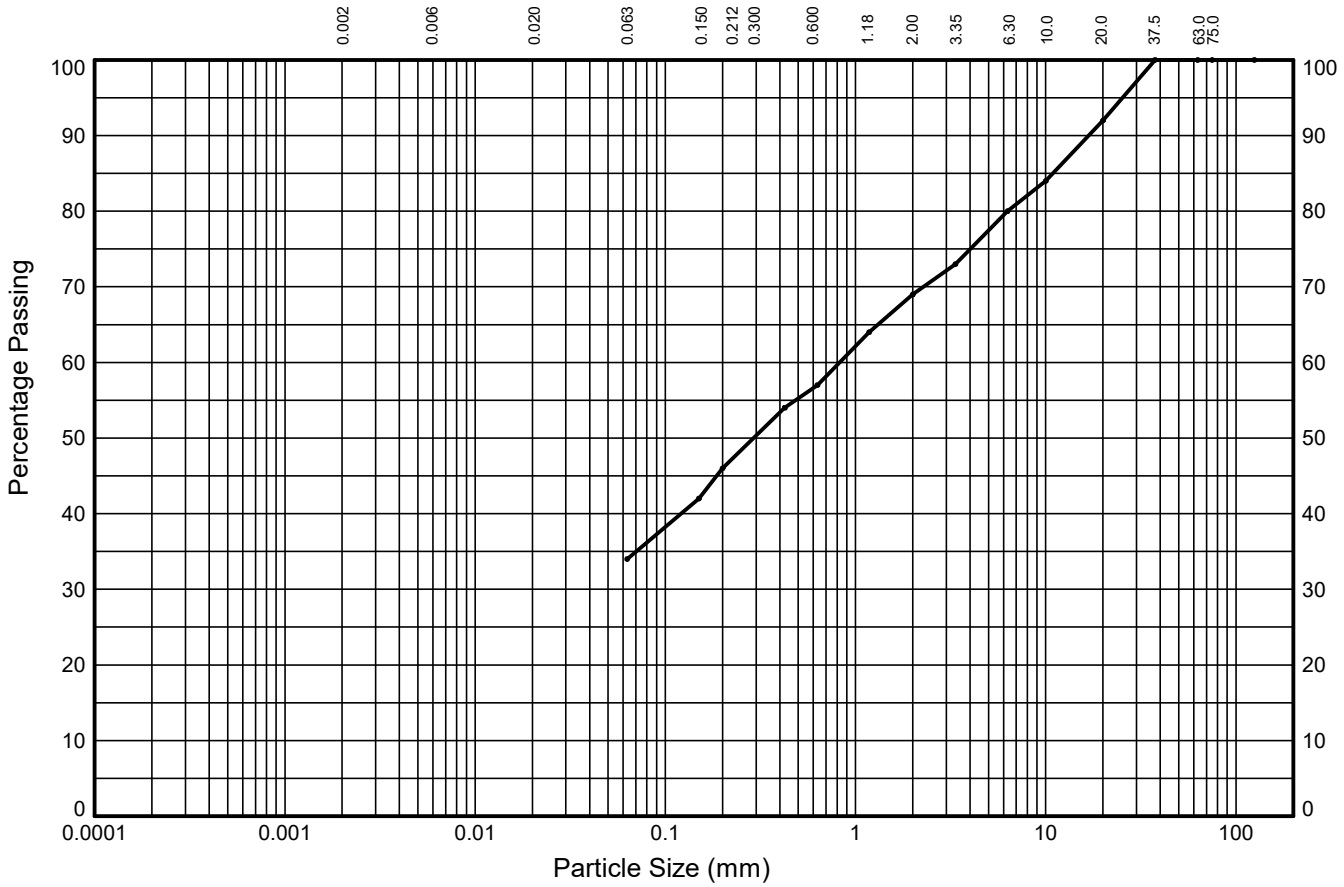
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016

Window Sample: **WS16** Sample Ref: **2** Sample Type: **B** Depth (m): **0.20**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	12%	11%	12%	11%	12%	8%	
	SILT			SAND			GRAVEL			
34%				35%			31%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**92**
10.0	**84**
6.30	**80**
3.35	**73**
2.00	**69**
1.18	**64**
0.630	**57**
0.425	**54**
0.200	**46**
0.150	**42**
0.063	**34**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**NA**
D_{30} (mm)	**NA**
D_{50} (mm)	**0.292**
D_{60} (mm)	**0.824**
D_{85} (mm)	**10.905**
D_{90} (mm)	**16.818**
C_U	**NA**
C_C	**NA**

Soil Description:

Brown very gravelly very clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Contract	Contract Ref:
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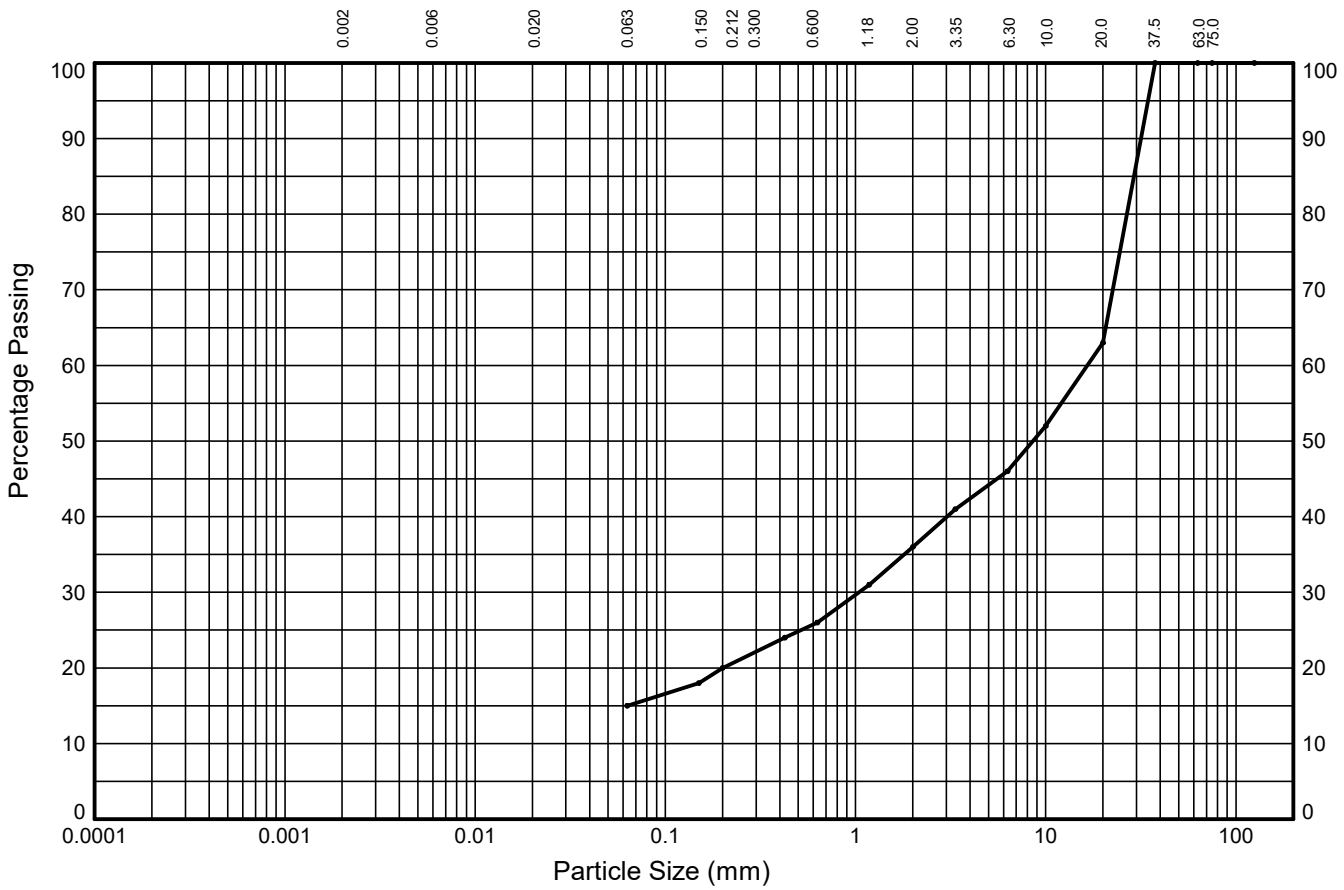
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016

Window Sample: **WS16** Sample Ref: **6** Sample Type: **B** Depth (m): **1.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	5%	6%	10%	10%	17%	37%	
	SILT			SAND			GRAVEL			
15%				21%			64%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**63**
10.0	**52**
6.30	**46**
3.35	**41**
2.00	**36**
1.18	**31**
0.630	**26**
0.425	**24**
0.200	**20**
0.150	**18**
0.063	**15**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**0.063**
D_{30} (mm)	**1.041**
D_{50} (mm)	**8.573**
D_{60} (mm)	**16.555**
D_{85} (mm)	**29.064**
D_{90} (mm)	**31.641**
C_U	**NA**
C_C	**NA**

Soil Description:

Brown very sandy clayey GRAVEL

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Compiled By		Date
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Contract	Contract Ref:
A635 Barnsley Bus RapidTransit Route	**765865**

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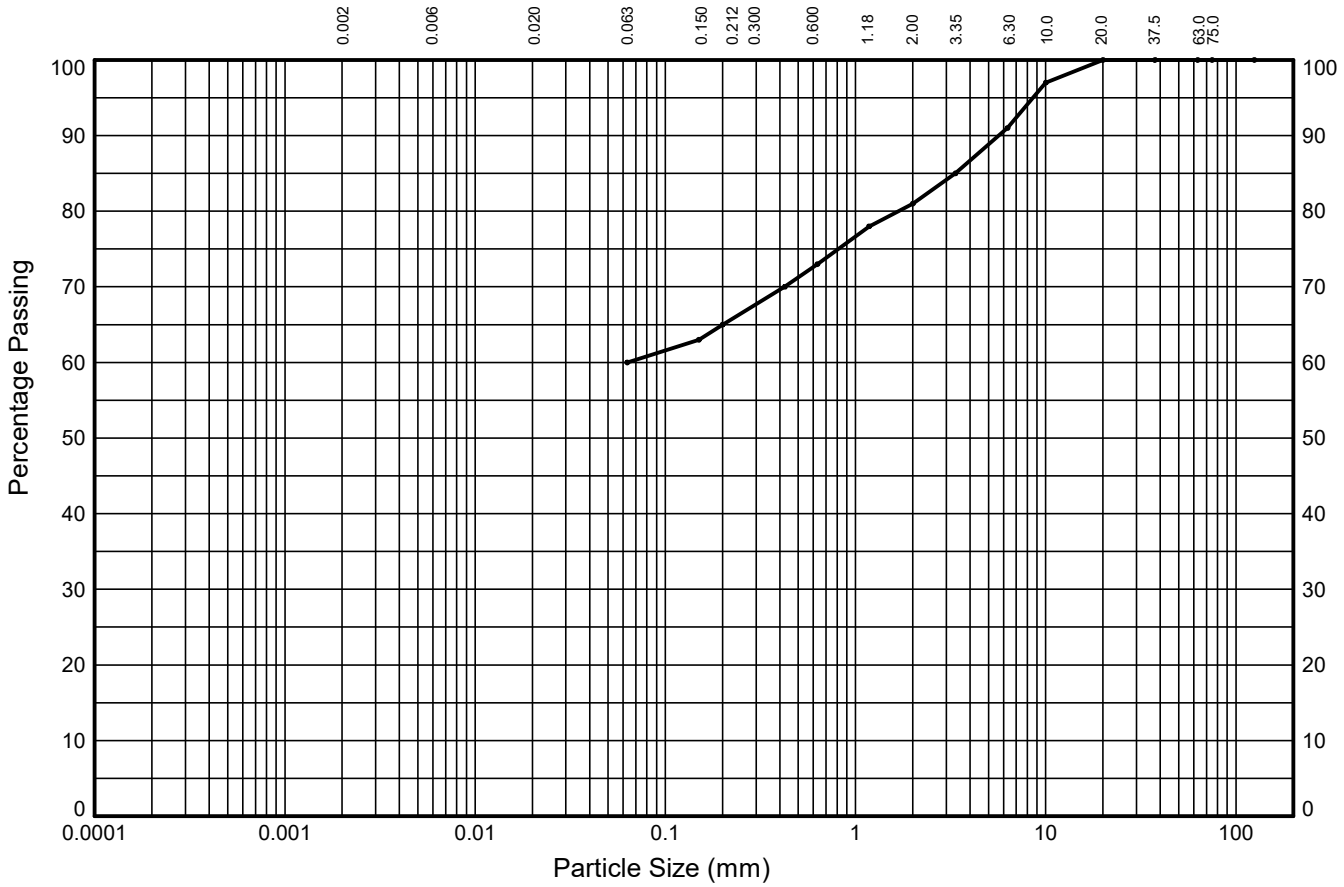
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016

Window Sample: **WS17** Sample Ref: **4** Sample Type: **B** Depth (m): **0.90**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	5%	8%	8%	10%	9%	0%	
	SILT			SAND			GRAVEL			
60%				21%			19%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**100**
10.0	**97**
6.30	**91**
3.35	**85**
2.00	**81**
1.18	**78**
0.630	**73**
0.425	**70**
0.200	**65**
0.150	**63**
0.063	**60**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**NA**
D_{30} (mm)	**NA**
D_{50} (mm)	**NA**
D_{60} (mm)	**0.063**
D_{85} (mm)	**3.350**
D_{90} (mm)	**5.671**
C_U	**NA**
C_C	**NA**

Soil Description:

Brown slightly gravelly slightly sandy CLAY

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Compiled By	Date
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Contract	Contract Ref:
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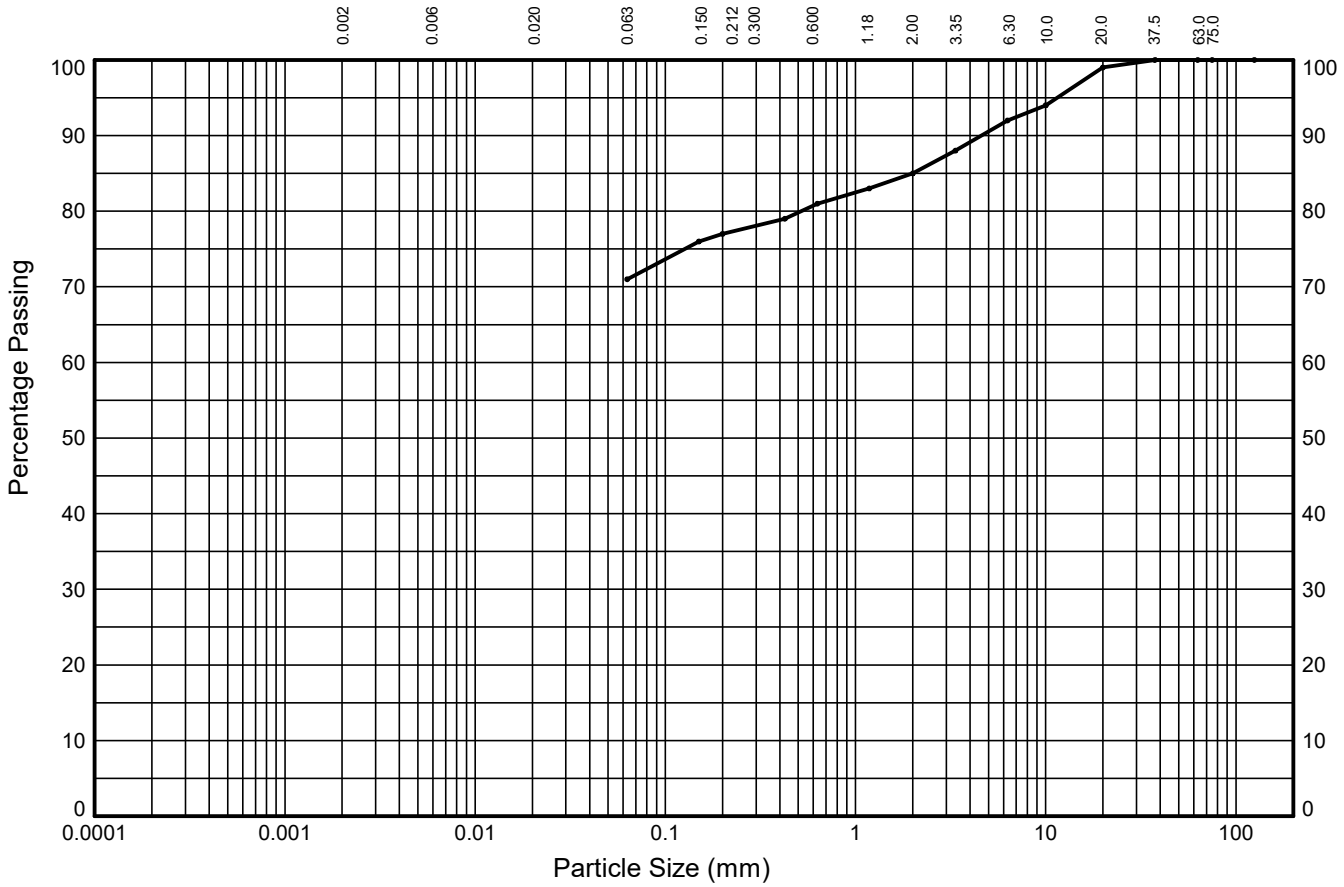
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016

Window Sample: **WS19** Sample Ref: **4** Sample Type: **B** Depth (m): **0.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	6%	4%	4%	7%	7%	1%	
	SILT			SAND			GRAVEL			
71%				14%			15%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**99**
10.0	**94**
6.30	**92**
3.35	**88**
2.00	**85**
1.18	**83**
0.630	**81**
0.425	**79**
0.200	**77**
0.150	**76**
0.063	**71**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**NA**
D_{30} (mm)	**NA**
D_{50} (mm)	**NA**
D_{60} (mm)	**NA**
D_{85} (mm)	**2.000**
D_{90} (mm)	**4.594**
C_U	**NA**
C_C	**NA**

Soil Description:

Brown slightly sandy slightly gravelly CLAY

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Compiled By	Date
LORNA WHITWORTH	10/12/24

Contract	Contract Ref:
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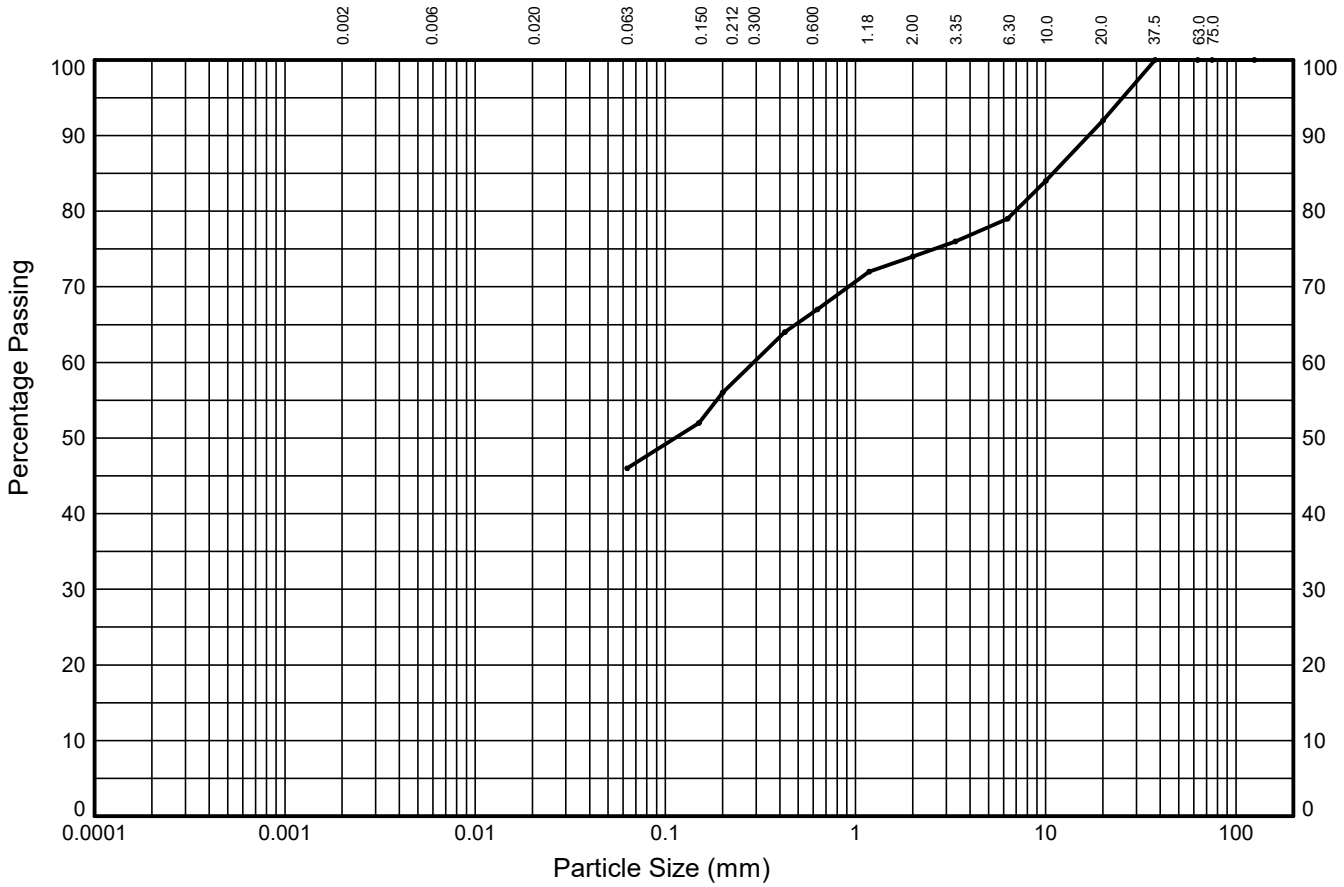
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016

Window Sample: **WS23** Sample Ref: **5** Sample Type: **B** Depth (m): **1.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	10%	11%	7%	5%	13%	8%	
	SILT			SAND			GRAVEL			
46%				28%			26%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**92**
10.0	**84**
6.30	**79**
3.35	**76**
2.00	**74**
1.18	**72**
0.630	**67**
0.425	**64**
0.200	**56**
0.150	**52**
0.063	**46**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**NA**
D_{30} (mm)	**NA**
D_{50} (mm)	**0.112**
D_{60} (mm)	**0.292**
D_{85} (mm)	**10.905**
D_{90} (mm)	**16.818**
C_U	**NA**
C_C	**NA**

Soil Description:

Brownish white slightly gravelly slightly sandy CLAY contains chalk

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Compiled By		Date
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Contract	Contract Ref:
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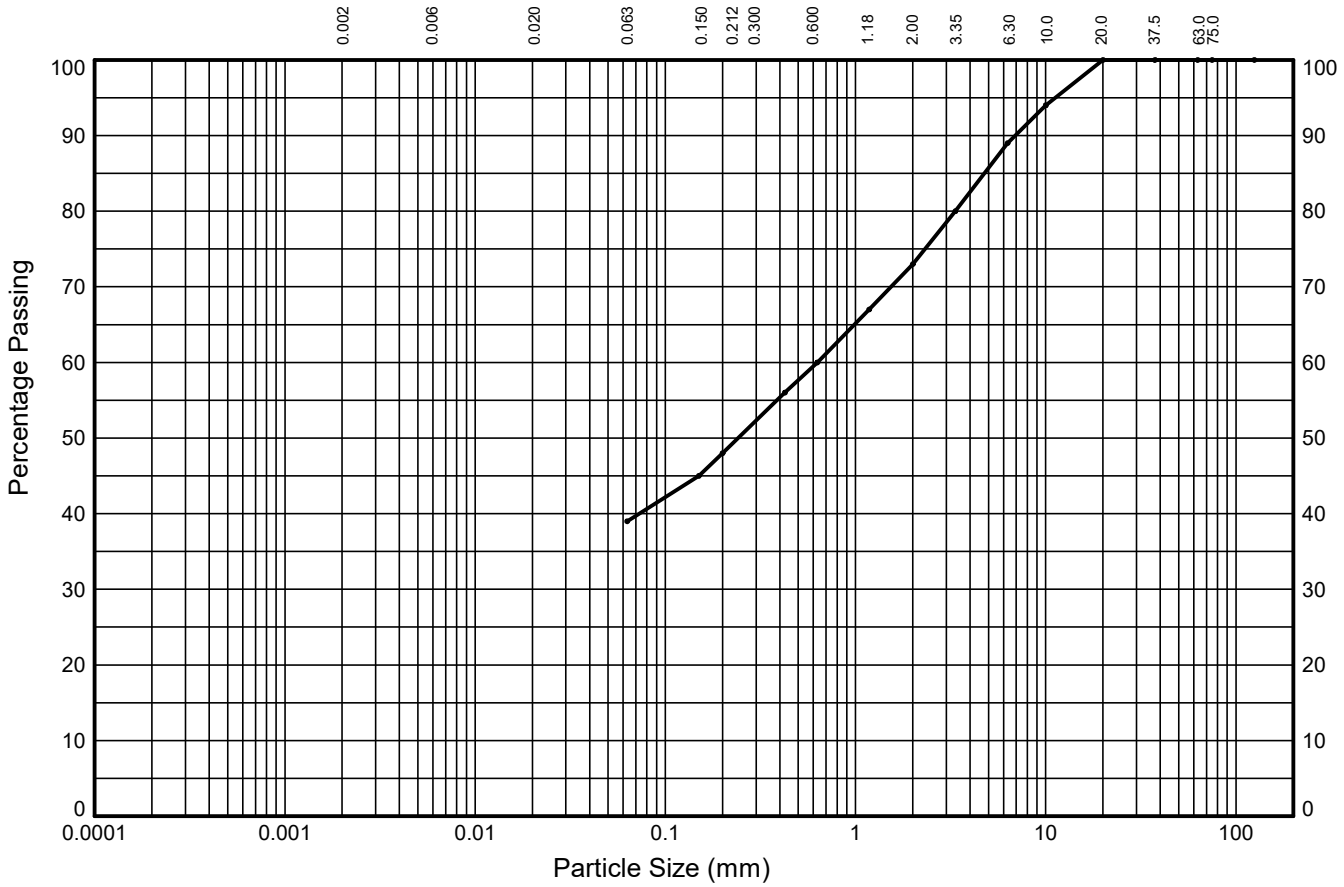
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016

Window Sample: **WS27** Sample Ref: **6** Sample Type: **B** Depth (m): **1.40**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	9%	12%	13%	16%	11%	0%	
	SILT			SAND			GRAVEL			
39%				34%			27%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**100**
10.0	**94**
6.30	**89**
3.35	**80**
2.00	**73**
1.18	**67**
0.630	**60**
0.425	**56**
0.200	**48**
0.150	**45**
0.063	**39**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**NA**
D_{30} (mm)	**NA**
D_{50} (mm)	**0.241**
D_{60} (mm)	**0.630**
D_{85} (mm)	**4.758**
D_{90} (mm)	**6.910**
C_U	**NA**
C_C	**NA**

Soil Description:

Dark brown slightly gravelly slightly sandy clayey SILT

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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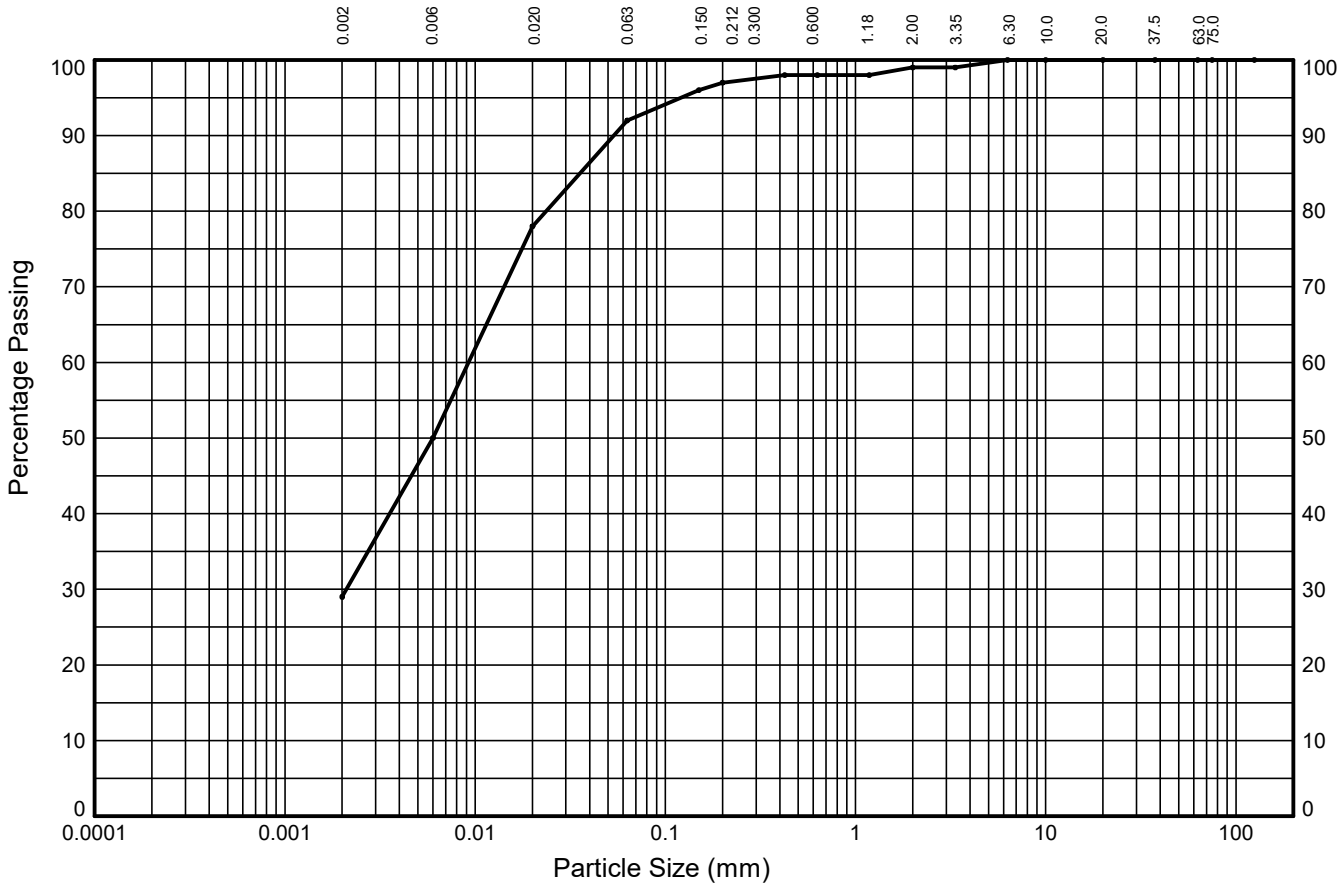
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Window Sample: **WS29A** Sample Ref: **7** Sample Type: **B** Depth (m): **2.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	22%	27%	14%	5%	1%	1%	1%	0%	0%	
	SILT			SAND			GRAVEL			
29%	63%			7%			1%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**100**
10.0	**100**
6.30	**100**
3.35	**99**
2.00	**99**
1.18	**98**
0.630	**98**
0.425	**98**
0.200	**97**
0.150	**96**
0.063	**92**

Particle Diameter (mm)	Percent Passing (%)
0.02	**78**
0.006	**50**
0.002	**29**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**NA**
D_{30} (mm)	**0.002**
D_{50} (mm)	**0.006**
D_{60} (mm)	**0.009**
D_{85} (mm)	**0.035**
D_{90} (mm)	**0.053**
C_U	**NA**
C_C	**NA**

Soil Description:

Brown mottled grey slightly gravelly slightly sandy clayey SILT

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Contract	Contract Ref:
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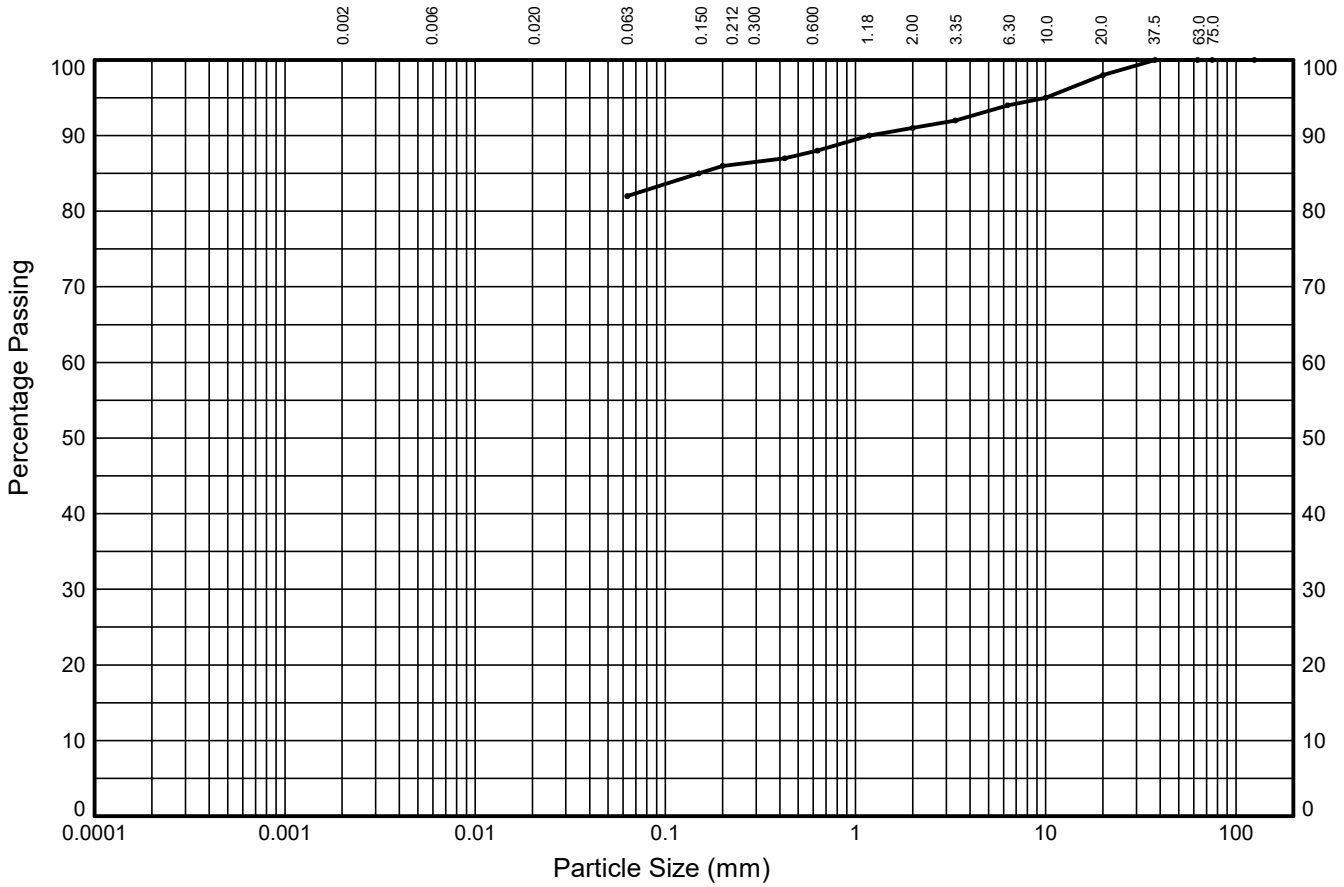
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016

Window Sample: **WS33** Sample Ref: **3** Sample Type: **B** Depth (m): **0.40**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	4%	2%	3%	3%	4%	2%	
	SILT			SAND			GRAVEL			
82%				9%			9%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**98**
10.0	**95**
6.30	**94**
3.35	**92**
2.00	**91**
1.18	**90**
0.630	**88**
0.425	**87**
0.200	**86**
0.150	**85**
0.063	**82**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**NA**
D_{30} (mm)	**NA**
D_{50} (mm)	**NA**
D_{60} (mm)	**NA**
D_{85} (mm)	**0.150**
D_{90} (mm)	**1.180**
C_U	**NA**
C_C	**NA**

Soil Description:

Brown slightly sandy slightly gravelly CLAY

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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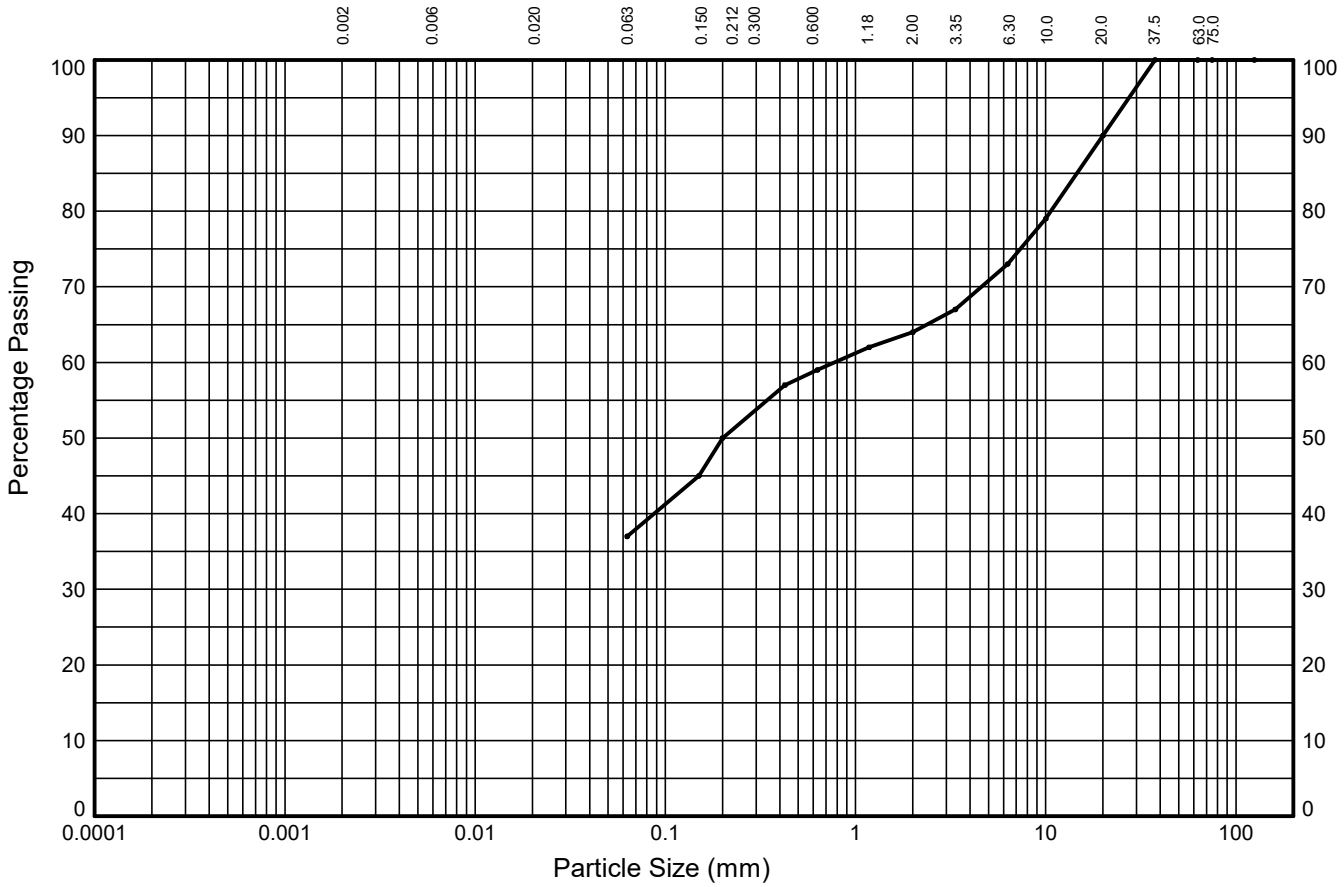
PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016

Window Sample: **WS34** Sample Ref: **2** Sample Type: **B** Depth (m): **0.10**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	13%	9%	5%	9%	17%	10%	
	SILT			SAND			GRAVEL			
37%				27%			36%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**90**
10.0	**79**
6.30	**73**
3.35	**67**
2.00	**64**
1.18	**62**
0.630	**59**
0.425	**57**
0.200	**50**
0.150	**45**
0.063	**37**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**NA**
D_{30} (mm)	**NA**
D_{50} (mm)	**0.200**
D_{60} (mm)	**0.777**
D_{85} (mm)	**14.595**
D_{90} (mm)	**20.000**
C_U	**NA**
C_C	**NA**

Soil Description:

Brown slightly sandy gravelly CLAY

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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Contract	Contract Ref:
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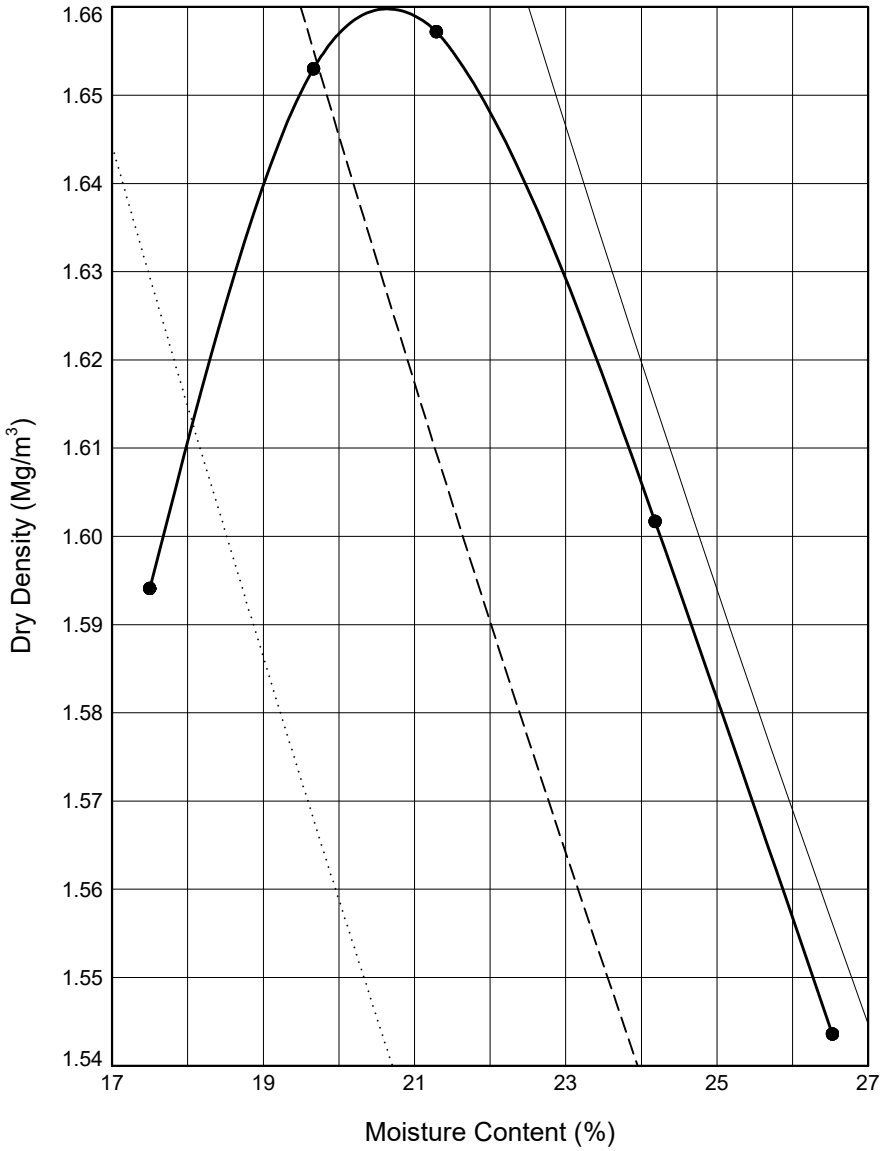
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 11.3,11.4,11.5,11.6,11.7 of BS1377:Part 2:2022

Borehole: **BH06** Sample Ref: **9** Sample Type: **B** Depth (m): **1.50**



Initial Sample Conditions			Test Details		Test Results		
Initial Moisture Content (%)	:	**24**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	:	**1.66**
% Retained on 37.5mm BS Sieve	:	**0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	:	**20.6**
% Retained on 20.0mm BS Sieve	:	**1**	Type of Mould	: **1 LITRE**	Method Used: **Clause 11.3**		
Particle Density - assumed (Mg/m^3)	:	**2.65**			Remarks:		
Size of Soil Pieces	:	**<20mm**	Single sample was used.				

Sample Description	Key to Air Voids Lines		
Brown mottled grey slightly sandy slightly gravelly CLAY	——— 0%	– – – – 5%	····· 10%

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Contract	Contract Ref:
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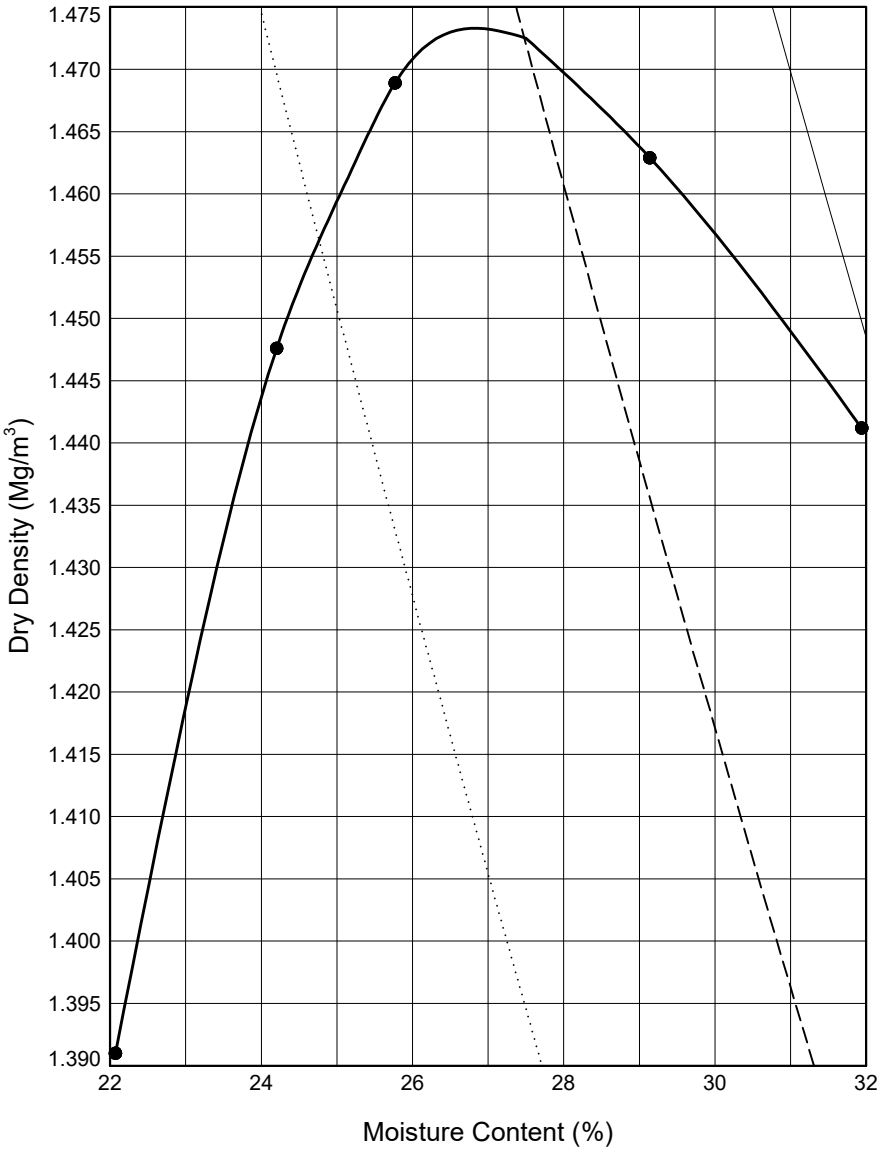
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 11.3,11.4,11.5,11.6,11.7 of BS1377:Part 2:2022

Borehole: **BH08** Sample Ref: **17** Sample Type: **B** Depth (m): **4.50**



Initial Sample Conditions			Test Details		Test Results		
Initial Moisture Content (%)	:	**32**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m³)	:	**1.47**
% Retained on 37.5mm BS Sieve	:	**0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	:	**27**
% Retained on 20.0mm BS Sieve	:	**0**	Type of Mould	: **1 LITRE**	Method Used: **Clause 11.3**		
Particle Density - assumed (Mg/m³)	:	**2.70**			Remarks:		
Size of Soil Pieces	:	**<20mm**	Single sample was used.				

Sample Description	Key to Air Voids Lines		
Brown grey slightly gravelly slightly sandy CLAY	——— 0%	– – – – 5%	····· 10%

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Compiled By		Date
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Contract	Contract Ref:
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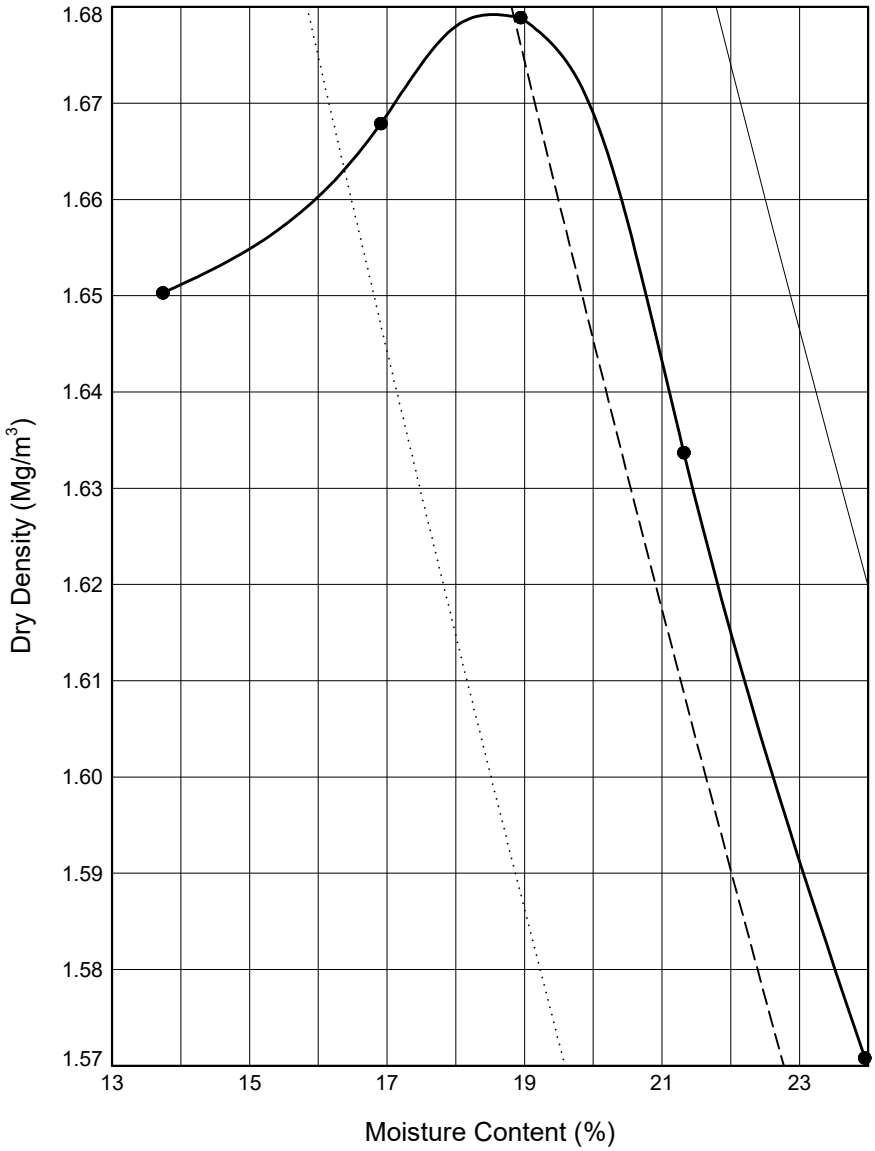
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 11.3,11.4,11.5,11.6,11.7 of BS1377:Part 2:2022
NON-STANDARD TEST

Borehole: **BH09** Sample Ref: **8** Sample Type: **D** Depth (m): **2.00**



Initial Sample Conditions			Test Details		Test Results		
Initial Moisture Content (%)	:	**24**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m³)	:	**1.68**
% Retained on 37.5mm BS Sieve	:	**3**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	:	**18.9**
% Retained on 20.0mm BS Sieve	:	**3**	Type of Mould	: **1 LITRE**	Method Used: **Clause 11.3**		
Particle Density - assumed (Mg/m³)	:	**2.65**			Remarks:		
Size of Soil Pieces	:	**<20mm**	Single sample was used.				

Sample Description	Key to Air Voids Lines		
Brown gravelly sandy CLAY	——— 0%	– – – – 5%	····· 10%

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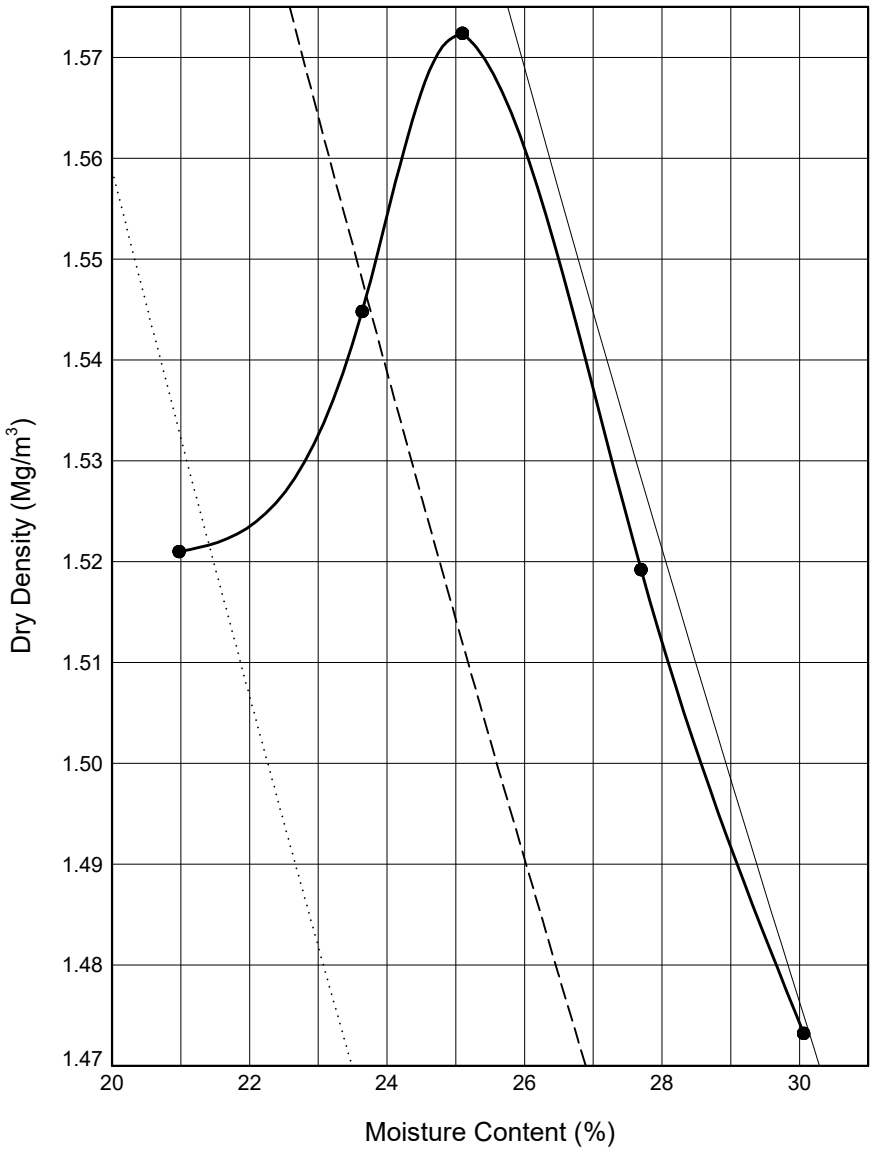
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 11.3,11.4,11.5,11.6,11.7 of BS1377:Part 2:2022

Borehole: **BH09** Sample Ref: **16** Sample Type: **B** Depth (m): **3.50**



Initial Sample Conditions			Test Details		Test Results		
Initial Moisture Content (%)	:	**30**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m³)	:	**1.57**
% Retained on 37.5mm BS Sieve	:	**0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	:	**25**
% Retained on 20.0mm BS Sieve	:	**1**	Type of Mould	: **1 LITRE**	Method Used: **Clause 11.3**		
Particle Density - assumed (Mg/m³)	:	**2.65**			Remarks:		
Size of Soil Pieces	:	**<20mm**	Single sample was used.				

Sample Description	Key to Air Voids Lines		
Grey slightly gravelly slightly sandy slightly silty CLAY	——— 0%	– – – – 5%	····· 10%

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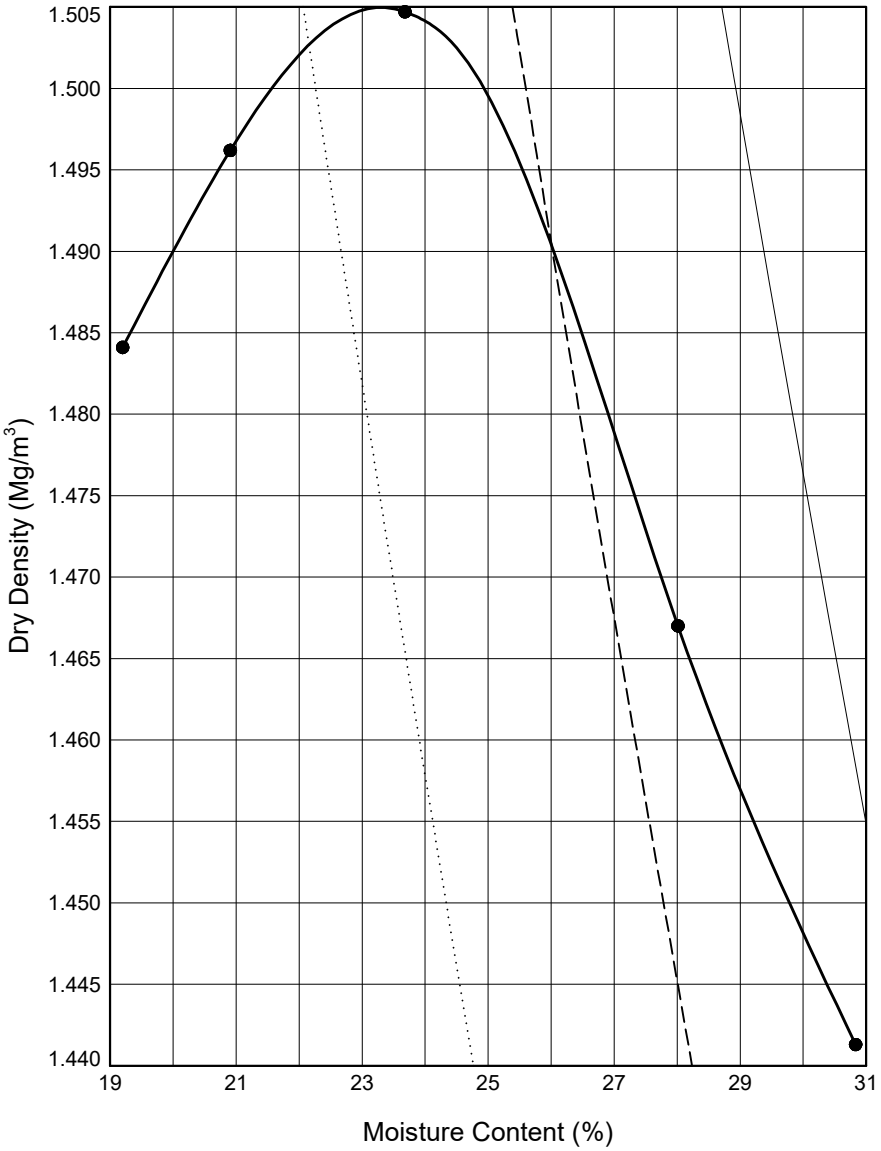
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 11.3,11.4,11.5,11.6,11.7 of BS1377:Part 2:2022

Borehole: **BH09** Sample Ref: **23** Sample Type: **B** Depth (m): **6.00**



Initial Sample Conditions			Test Details		Test Results		
Initial Moisture Content (%)	:	**28**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	:	**1.51**
% Retained on 37.5mm BS Sieve	:	**0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	:	**24**
% Retained on 20.0mm BS Sieve	:	**1**	Type of Mould	: **1 LITRE**	Method Used: **Clause 11.3**		
Particle Density - assumed (Mg/m^3)	:	**2.65**			Remarks:		
Size of Soil Pieces	:	**<20mm**	Single sample was used.				

Sample Description	Key to Air Voids Lines		
Brown grey slightly gravelly slightly sandy silty CLAY	——— 0%	– – – – 5%	····· 10%

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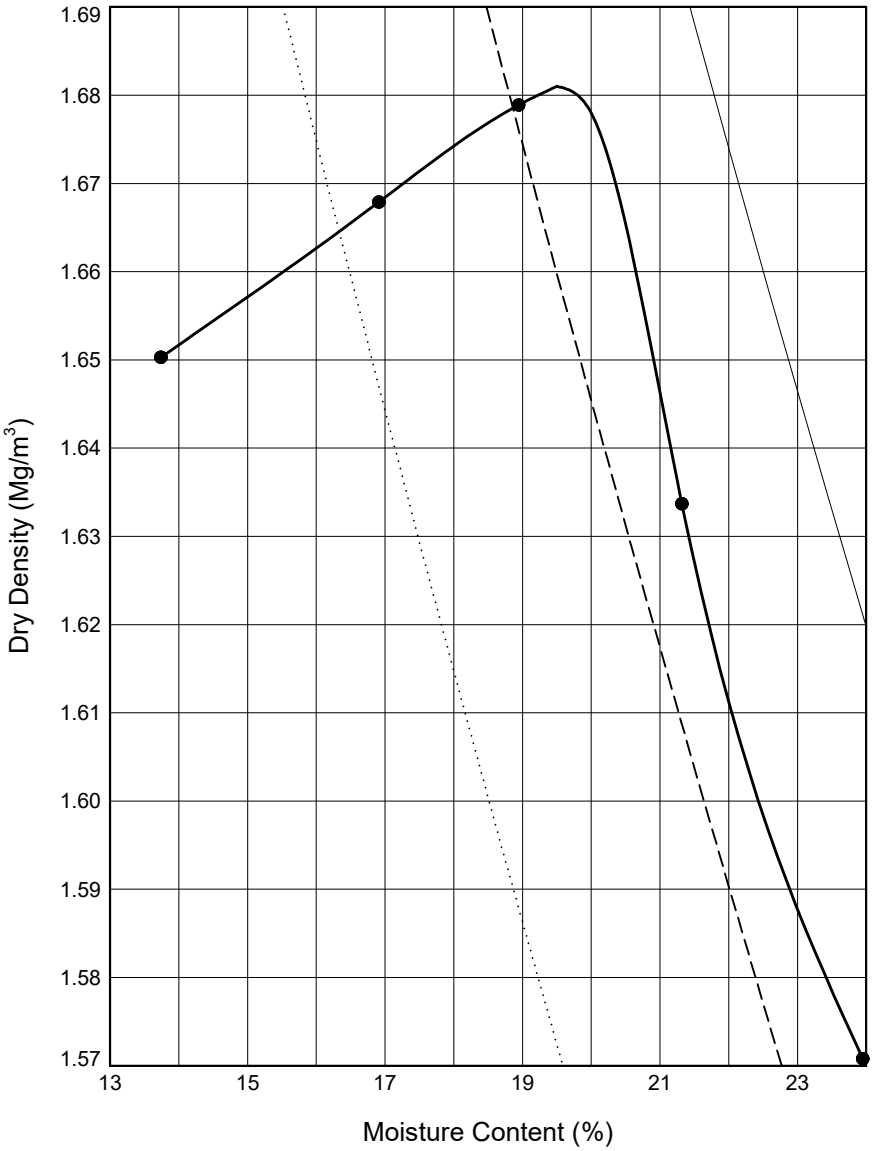
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 11.3,11.4,11.5,11.6,11.7 of BS1377:Part 2:2022
NON-STANDARD TEST

Borehole: **BH09** Sample Ref: **25** Sample Type: **D** Depth (m): **7.00**



Initial Sample Conditions			Test Details		Test Results		
Initial Moisture Content (%)	:	**24**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m³)	:	**1.68**
% Retained on 37.5mm BS Sieve	:	**3**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	:	**20**
% Retained on 20.0mm BS Sieve	:	**3**	Type of Mould	: **1 LITRE**	Method Used: **Clause 11.3**		
Particle Density - assumed (Mg/m³)	:	**2.65**			Remarks:		
Size of Soil Pieces	:	**<20mm**	Single sample was used.				

Sample Description	Key to Air Voids Lines		
Brown very sandy CLAY	——— 0%	– – – – 5%	····· 10%

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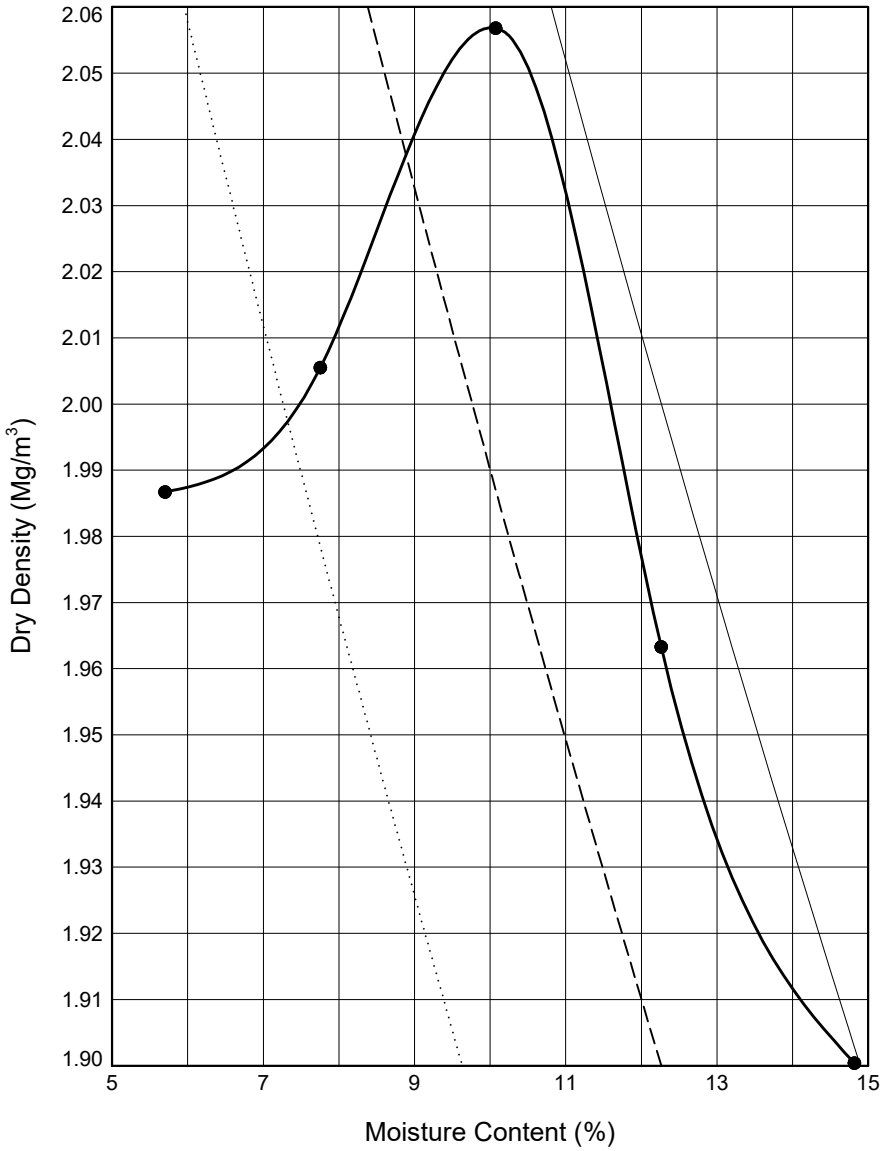
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 11.3,11.4,11.5,11.6,11.7 of BS1377:Part 2:2022
NON-STANDARD TEST

Borehole: **BH10** Sample Ref: **11** Sample Type: **B** Depth (m): **2.50**



Initial Sample Conditions			Test Details		Test Results		
Initial Moisture Content (%)	:	**12**	Compaction Type	: **Heavy**	Maximum Dry Density (Mg/m³)	:	**2.06**
% Retained on 37.5mm BS Sieve	:	**14**	Mass of Rammer (kg):	**4.5**	Optimum Moisture Content (%)	:	**10**
% Retained on 20.0mm BS Sieve	:	**11**	Type of Mould	: **1 LITRE**	Method Used:		**Clause 11.5**
Particle Density - assumed (Mg/m³)	:	**2.65**			Remarks:		
Size of Soil Pieces	:	**<20mm**	Single sample was used.				

Sample Description	Key to Air Voids Lines		
Brown gravelly sandy CLAY	——— 0%	– – – – 5%	····· 10%

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Compiled By	Date
LUKE FISHER	**10/12/24**

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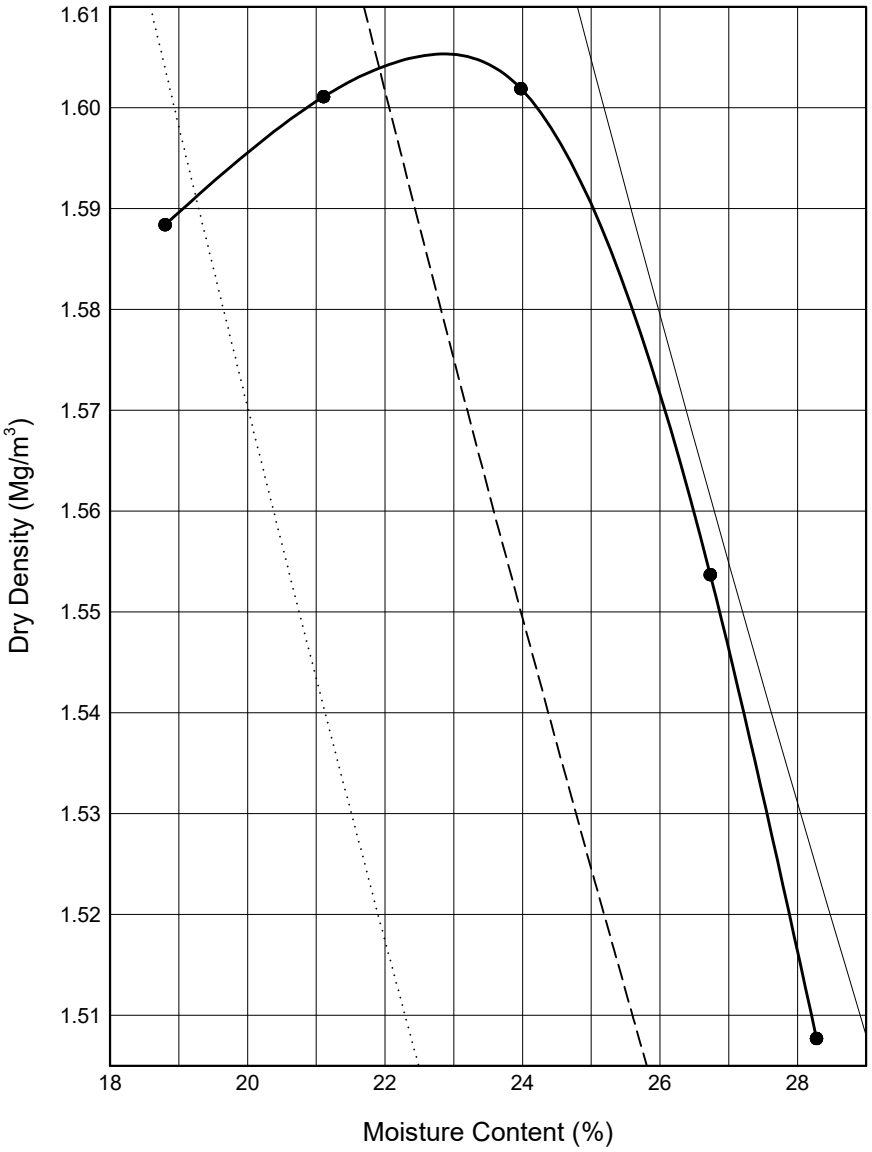
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 11.3,11.4,11.5,11.6,11.7 of BS1377:Part 2:2022

Borehole: **BH10** Sample Ref: **19** Sample Type: **B** Depth (m): **4.50**



Initial Sample Conditions			Test Details		Test Results		
Initial Moisture Content (%)	:	**27**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	:	**1.60**
% Retained on 37.5mm BS Sieve	:	**0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	:	**23**
% Retained on 20.0mm BS Sieve	:	**0**	Type of Mould	: **1 LITRE**	Method Used: **Clause 11.3**		
Particle Density - assumed (Mg/m^3)	:	**2.68**			Remarks:		
Size of Soil Pieces	:	**<20mm**	Single sample was used.				

Sample Description	Key to Air Voids Lines		
Dark brown grey slightly gravelly slightly sandy clayey SILT	——— 0%	– – – – 5%	····· 10%

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Francesca Bennett	**FRANCESCA BENNETT**	**10/12/24**

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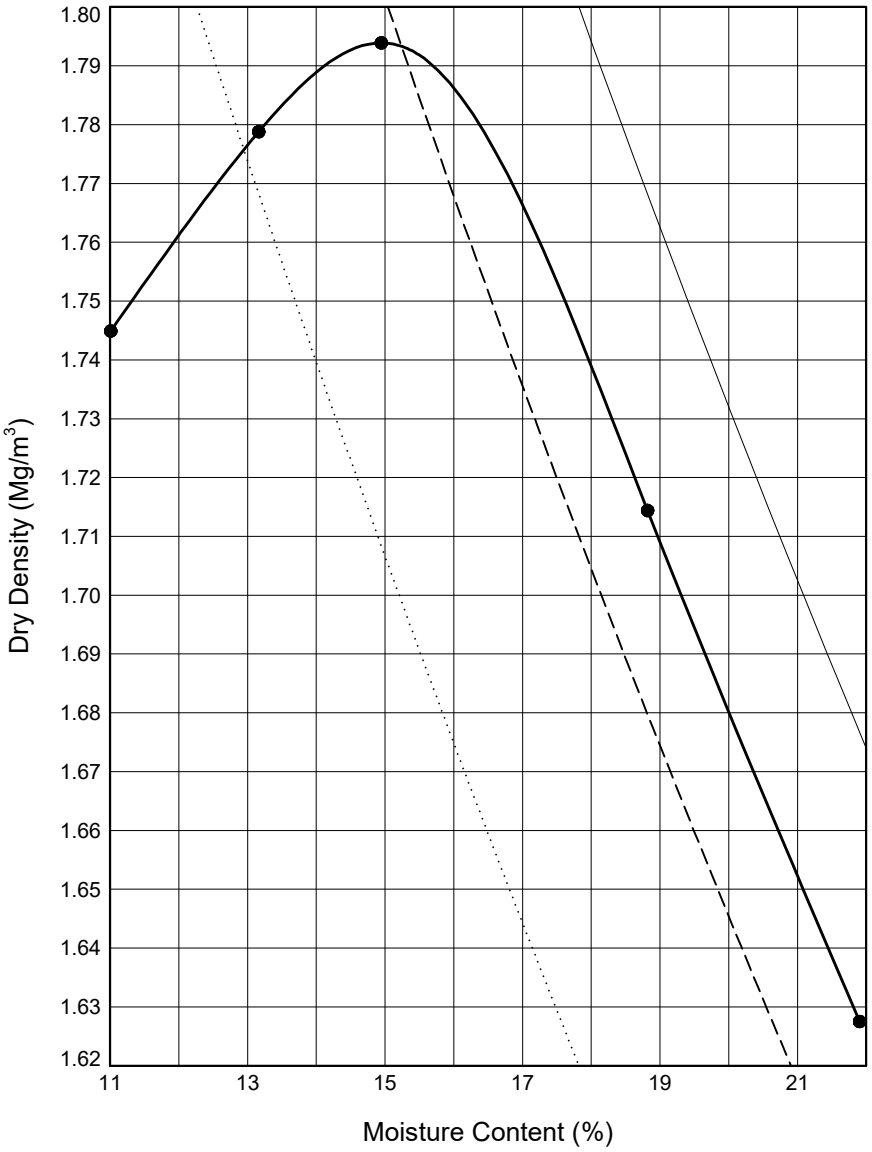
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 11.3,11.4,11.5,11.6,11.7 of BS1377:Part 2:2022

Borehole: **BH10** Sample Ref: **27** Sample Type: **B** Depth (m): **7.50**



Initial Sample Conditions			Test Details		Test Results		
Initial Moisture Content (%)	:	**15**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m³)	:	**1.79**
% Retained on 37.5mm BS Sieve	:	**0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	:	**15**
% Retained on 20.0mm BS Sieve	:	**1**	Type of Mould	: **1 LITRE**	Method Used: **Clause 11.3**		
Particle Density - assumed (Mg/m³)	:	**2.65**			Remarks:		
Size of Soil Pieces	:	**<20mm**	Single sample was used.				

Sample Description	Key to Air Voids Lines		
Dark brown mottled grey slightly gravelly sandy CLAY	——— 0%	– – – – 5%	····· 10%

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Compiled By		Date
	LUKE FISHER	**10/12/24**

Contract	Contract Ref:
A635 Barnsley Bus RapidTransit Route	**765865**

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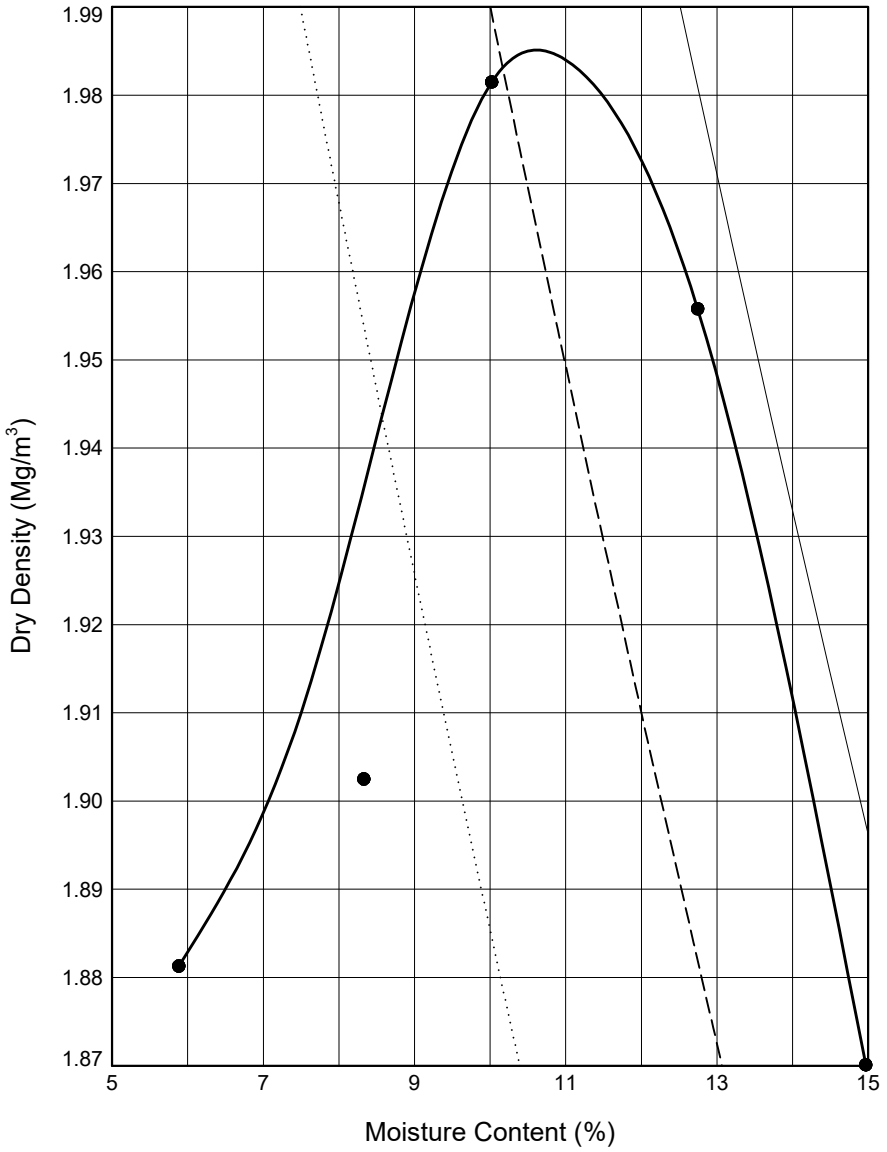
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 11.3,11.4,11.5,11.6,11.7 of BS1377:Part 2:2022
NON-STANDARD TEST

Borehole: **BH11** Sample Ref: **12** Sample Type: **B** Depth (m): **2.50**



Initial Sample Conditions			Test Details		Test Results		
Initial Moisture Content (%)	:	**13**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m³)	:	**1.98**
% Retained on 37.5mm BS Sieve	:	**17**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	:	**10**
% Retained on 20.0mm BS Sieve	:	**13**	Type of Mould	: **1 LITRE**	Method Used: **Clause 11.3**		
Particle Density - assumed (Mg/m³)	:	**2.65**			Remarks:		
Size of Soil Pieces	:	**<20mm**	Single sample was used.				

Sample Description	Key to Air Voids Lines		
Brown sandy gravelly CLAY with sandstone	——— 0%	– – – – 5%	····· 10%

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Compiled By		Date
	LUKE FISHER	**10/12/24**

Contract	Contract Ref:
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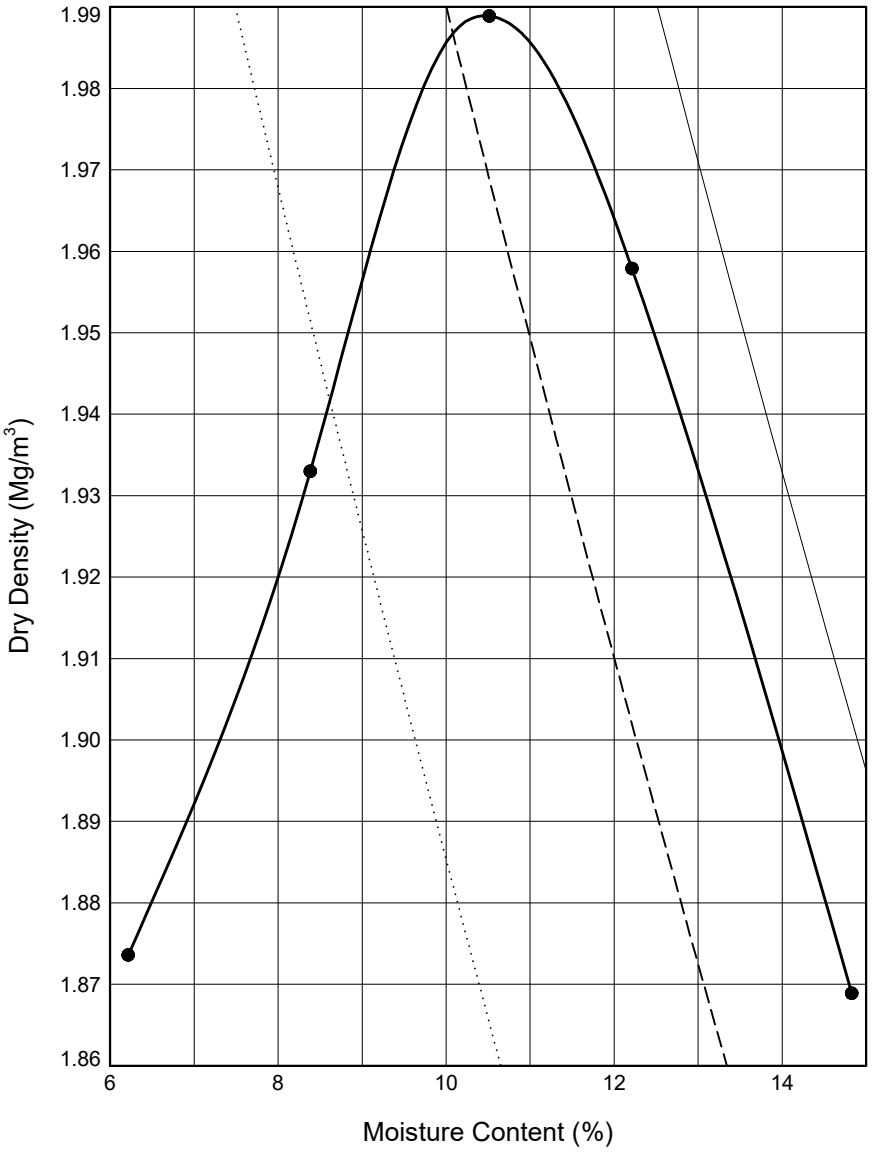
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 11.3,11.4,11.5,11.6,11.7 of BS1377:Part 2:2022
NON-STANDARD TEST

Borehole: **BH11** Sample Ref: **25** Sample Type: **B** Depth (m): **6.00**



Initial Sample Conditions			Test Details		Test Results		
Initial Moisture Content (%)	:	**12**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m³)	:	**1.99**
% Retained on 37.5mm BS Sieve	:	**14**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	:	**11**
% Retained on 20.0mm BS Sieve	:	**18**	Type of Mould	: **1 LITRE**	Method Used: **Clause 11.3**		
Particle Density - assumed (Mg/m³)	:	**2.65**			Remarks:		
Size of Soil Pieces	:	**<20mm**	Single sample was used.				

Sample Description	Key to Air Voids Lines		
Brown sandy gravelly CLAY	——— 0%	– – – – 5%	····· 10%

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Compiled By		Date
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Contract	Contract Ref:
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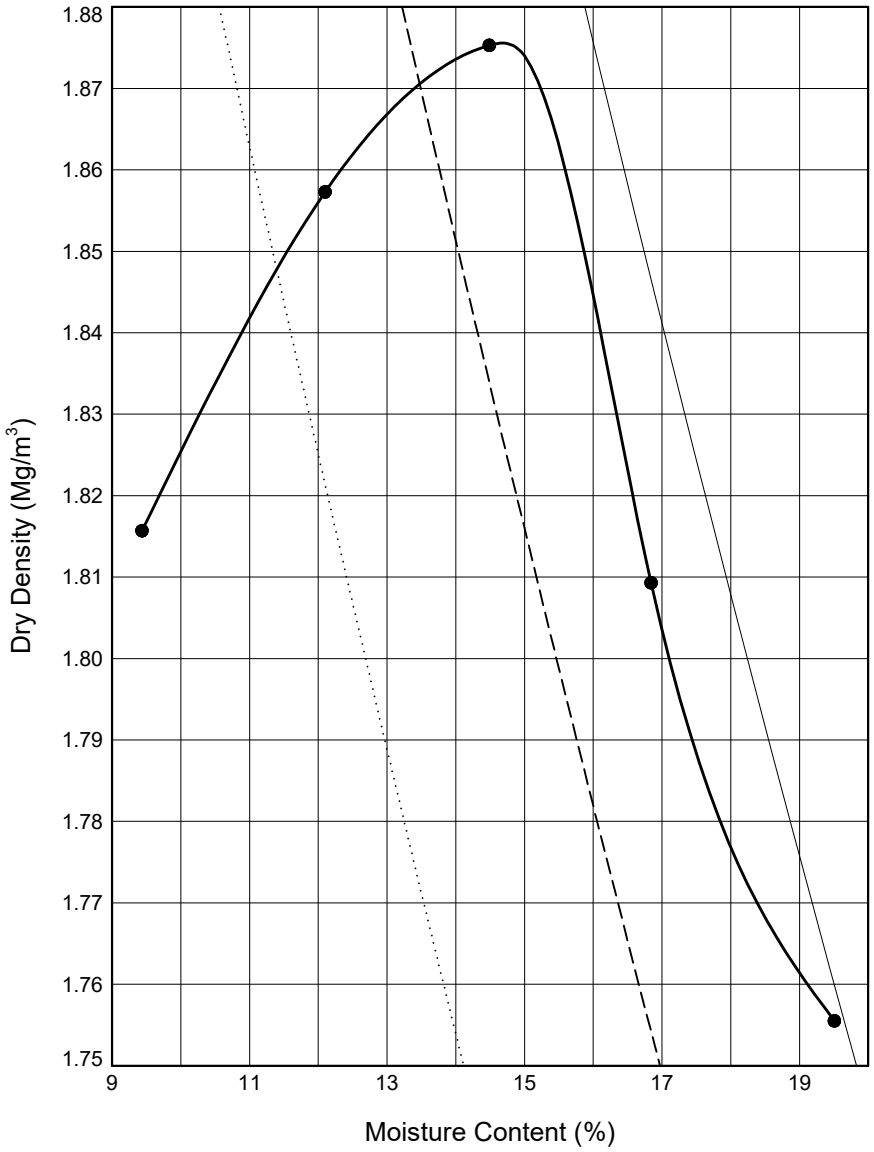
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 11.3,11.4,11.5,11.6,11.7 of BS1377:Part 2:2022
NON-STANDARD TEST

Borehole: **BH11** Sample Ref: **33** Sample Type: **B** Depth (m): **8.50**



Initial Sample Conditions			Test Details		Test Results		
Initial Moisture Content (%)	:	**20**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m³)	:	**1.88**
% Retained on 37.5mm BS Sieve	:	**3**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	:	**15**
% Retained on 20.0mm BS Sieve	:	**2**	Type of Mould	: **1 LITRE**	Method Used: **Clause 11.3**		
Particle Density - assumed (Mg/m³)	:	**2.68**			Remarks:		
Size of Soil Pieces	:	**<20mm**	Single sample was used.				

Sample Description	Key to Air Voids Lines		
Brown gravelly sandy CLAY	——— 0%	– – – – 5%	····· 10%

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Compiled By		Date
	LUKE FISHER	**10/12/24**

Contract	Contract Ref:
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SUMMARY OF WATER CONTENT TESTS

In accordance with BS EN ISO 17892-1:2014+A1:2022

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Water Content (%)	Drying Temperature (degC)	Description	Lab location
BH03	3	D	0.70	10.1	105	Brown gravelly SAND	C
BH06	9	B	1.50	26.6	105	Brown mottled grey slightly sandy slightly gravelly CLAY	C
BH08	10	DSPT	2.50	26.3	105	Brown slightly gravelly sandy CLAY	C
BH08	16	DSPT	4.50	31.9	105	Brown slightly sandy CLAY	C
BH09	8	D	2.00	10.4	105	Brown gravelly sandy CLAY	C
BH09	13	D	2.95	21.6	105	Brown gravelly slightly sandy silty CLAY	C
BH09	35	D	10.00	18.6	105	Brown sandy silty CLAY	C
BH10	33	D	9.50	26.6	105	Dark grey slightly gravelly sandy CLAY	C
BH11	7	DSPT	1.50	11.0	105	Brown very sandy silty clayey GRAVEL	C
BH11	17	D	4.00	10.5	105	Brown very gravelly very sandy CLAY	C
BH11	22	D	5.50	13.4	105	Brown gravelly sandy CLAY	C
WS01	2	D	0.60	15.0	105	Brown slightly gravelly sandy CLAY	C
WS05	15	DSPT	3.80	7.1	105	Brown sandy silty CLAY	C
WS18	2	D	0.50	4.0	105	Brown sandy GRAVEL	C

Lab location: B = Bristol (BS3 4AG), C = Castleford (WF10 1NJ), H = Hemel Hempstead (HP3 9RT), T = Tunbridge (TN2 3DR)

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Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**10.12.24**

Contract: **A635 Barnsley Bus RapidTransit Route**

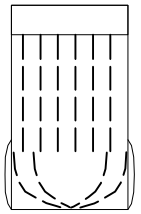
Contract Ref: **765865**

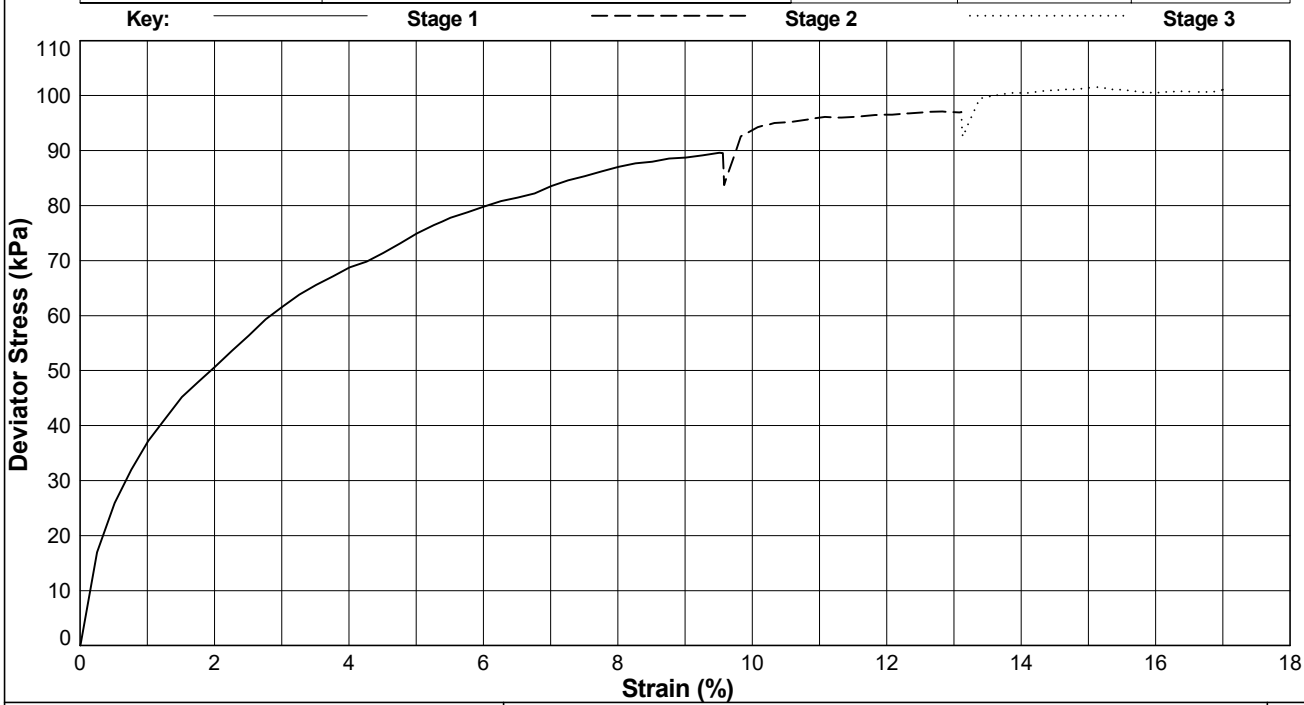
UNCONSOLIDATED UNDRAINED (QUICK) TRIAXIAL COMPRESSION TEST

In accordance with BS EN ISO 17892 Part 8 : 2018

Borehole: **BH06** Sample Ref: **11** Sample Type: **UT** Depth (m): **2.50**

Description : **Brown mottled grey slightly gravelly slightly sandy CLAY**

STAGE/SPECIMEN NUMBER			1	2	3
SPECIMEN DETAILS	Sample Condition		**Undisturbed**		
	Orientation of sample		**Vertical**		
	Diameter	(mm)	**103.31**		
	Height	(mm)	**212.58**		
	Water Content	(%)	**29.9**		
	Bulk Density	(Mg/m^3)	**1.91**		
	Dry Density	(Mg/m^3)	**1.47**		
	Void Ratio		**0.7995**		
TEST DETAILS	Membrane Type		**Rubber**	**Rubber**	**Rubber**
	Membrane Thickness	(mm)	**0.40**	**0.40**	**0.40**
	Rate of Axial Displacement	(%/min)	**1.88**	**1.88**	**1.88**
	Cell Pressure	(kPa)	**50**	**100**	**150**
	Membrane Correction	(kPa)	**0.86**	**1.06**	**1.19**
	Corrected Deviator Stress	(kPa)	**90**	**97**	**101**
	Undrained Shear Strength	(kPa)	**45**	**49**	**51**
FAILURE DETAILS	Strain at Failure	(%)	**9.5**	**12.8**	**15.0**
	Mode of Failure **Semi-plastic (bulging, shear & axial splitting)**				



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	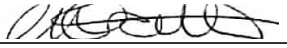	**LORNA WHITWORTH**	**10/12/24**
	Contract **A635 Barnsley Bus RapidTransit Route**	Contract Ref: **765865**	

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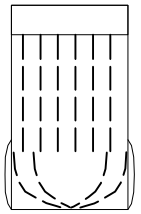
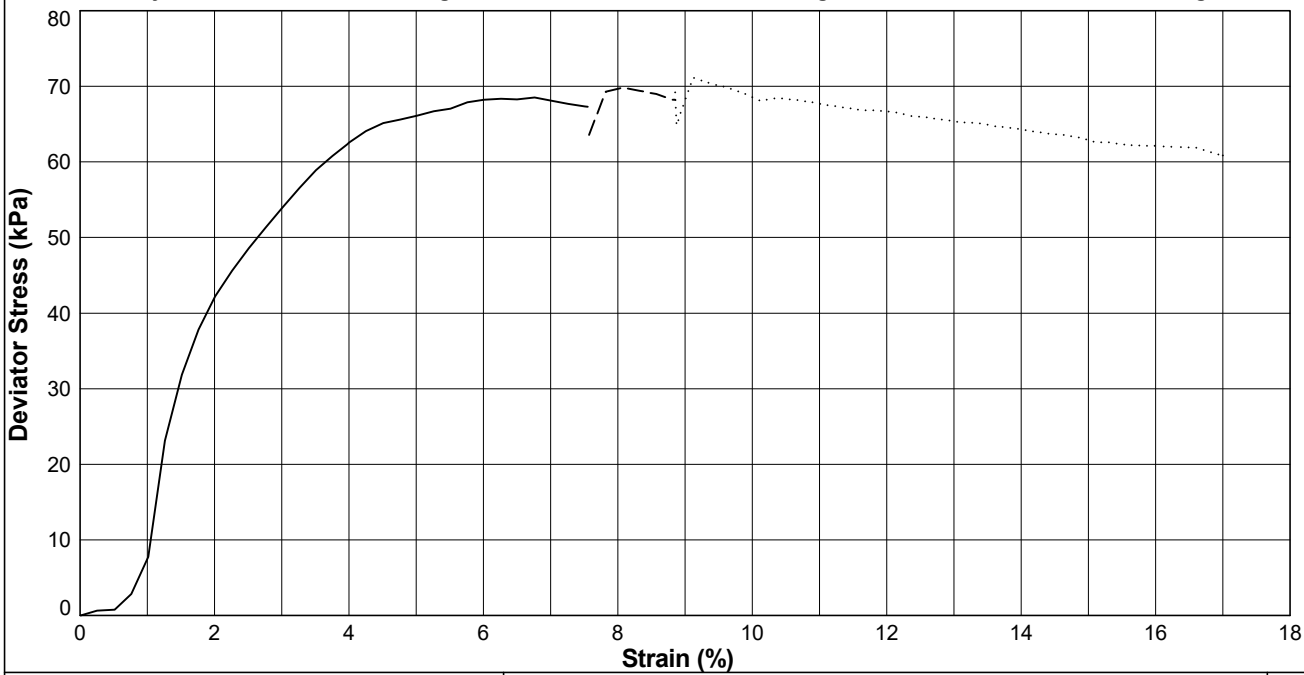
UNCONSOLIDATED UNDRAINED (QUICK) TRIAXIAL COMPRESSION TEST

In accordance with BS EN ISO 17892 Part 8 : 2018

Borehole: **BH08** Sample Ref: **13** Sample Type: **UT** Depth (m): **3.50**

Description : **Brown mottled grey slightly gravelly slightly sandy CLAY**

STAGE/SPECIMEN NUMBER			1	2	3
SPECIMEN DETAILS	Sample Condition		**Undisturbed**		
	Orientation of sample		**Vertical**		
	Diameter	(mm)	**103.42**		
	Height	(mm)	**211.92**		
	Water Content	(%)	**33.7**		
	Bulk Density	(Mg/m^3)	**1.88**		
	Dry Density	(Mg/m^3)	**1.41**		
	Void Ratio		**0.8813**		
TEST DETAILS	Membrane Type		**Rubber**	**Rubber**	**Rubber**
	Membrane Thickness	(mm)	**0.40**	**0.40**	**0.40**
	Rate of Axial Displacement	(%/min)	**1.89**	**1.89**	**1.89**
	Cell Pressure	(kPa)	**50**	**100**	**150**
	Membrane Correction	(kPa)	**0.65**	**0.75**	**0.83**
	Corrected Deviator Stress	(kPa)	**68**	**70**	**71**
	Undrained Shear Strength	(kPa)	**34**	**35**	**36**
FAILURE DETAILS	Strain at Failure	(%)	**6.8**	**8.1**	**9.1**
	Mode of Failure **Semi-plastic (bulging, shear & axial splitting)**				



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LORNA WHITWORTH	10/12/24

Contract	Contract Ref:
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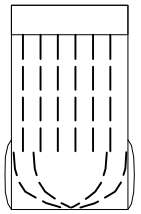
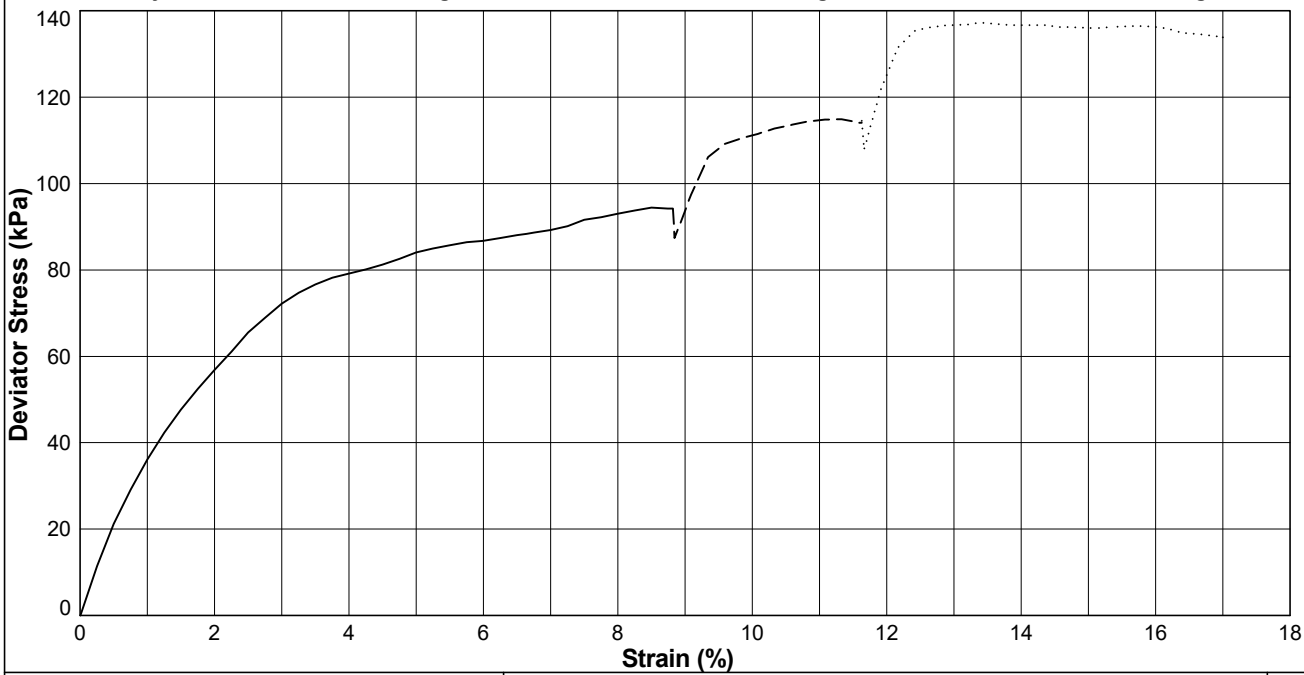
UNCONSOLIDATED UNDRAINED (QUICK) TRIAXIAL COMPRESSION TEST

In accordance with BS EN ISO 17892 Part 8 : 2018

Borehole: **BH08** Sample Ref: **20** Sample Type: **UT** Depth (m): **6.00**

Description : **Brown mottled grey slightly gravelly slightly sandy CLAY**

STAGE/SPECIMEN NUMBER			1	2	3
SPECIMEN DETAILS	Sample Condition		**Undisturbed**		
	Orientation of sample		**Vertical**		
	Diameter	(mm)	**103.53**		
	Height	(mm)	**212.04**		
	Water Content	(%)	**30.8**		
	Bulk Density	(Mg/m^3)	**18.31**		
	Dry Density	(Mg/m^3)	**14.00**		
	Void Ratio		**-0.8107**		
TEST DETAILS	Membrane Type		**Rubber**	**Rubber**	**Rubber**
	Membrane Thickness	(mm)	**0.40**	**0.40**	**0.40**
	Rate of Axial Displacement	(%/min)	**1.89**	**1.89**	**1.89**
	Cell Pressure	(kPa)	**100**	**200**	**400**
	Membrane Correction	(kPa)	**0.78**	**0.97**	**1.09**
	Corrected Deviator Stress	(kPa)	**94**	**115**	**137**
	Undrained Shear Strength	(kPa)	**47**	**57**	**69**
FAILURE DETAILS	Strain at Failure	(%)	**8.5**	**11.3**	**13.4**
	Mode of Failure **Semi-plastic (bulging, shear & axial splitting)**				



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Compiled By	Date
LORNA WHITWORTH	10/12/24

Contract	Contract Ref:
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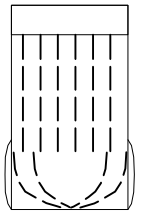
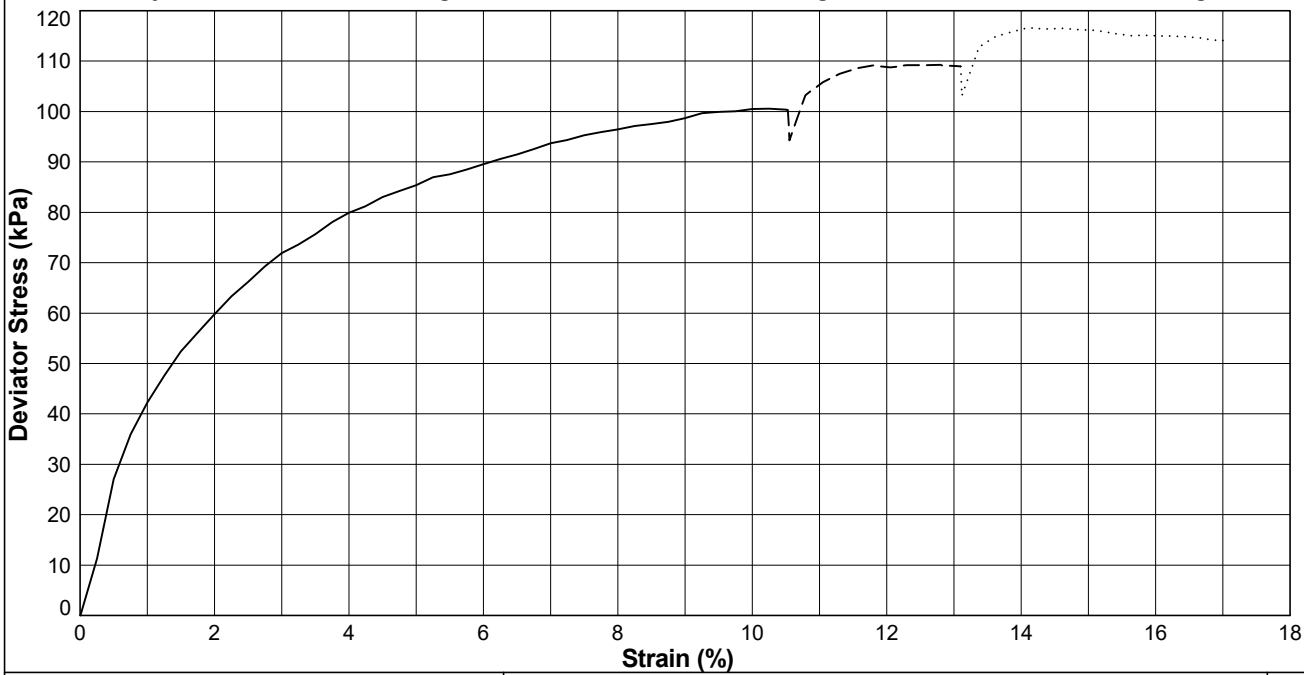
UNCONSOLIDATED UNDRAINED (QUICK) TRIAXIAL COMPRESSION TEST

In accordance with BS EN ISO 17892 Part 8 : 2018

Borehole: **BH09** Sample Ref: **12** Sample Type: **UT** Depth (m): **2.50**

Description : **Brown mottled grey slightly gravelly slightly sandy CLAY**

STAGE/SPECIMEN NUMBER			1	2	3
SPECIMEN DETAILS	Sample Condition		**Undisturbed**		
	Orientation of sample		**Vertical**		
	Diameter	(mm)	**102.90**		
	Height	(mm)	**211.53**		
	Water Content	(%)	**26.1**		
	Bulk Density	(Mg/m^3)	**1.99**		
	Dry Density	(Mg/m^3)	**1.58**		
	Void Ratio		**0.6817**		
TEST DETAILS	Membrane Type		**Rubber**	**Rubber**	**Rubber**
	Membrane Thickness	(mm)	**0.40**	**0.40**	**0.40**
	Rate of Axial Displacement	(%/min)	**1.89**	**1.89**	**1.89**
	Cell Pressure	(kPa)	**50**	**100**	**150**
	Membrane Correction	(kPa)	**0.91**	**1.06**	**1.14**
	Corrected Deviator Stress	(kPa)	**101**	**109**	**117**
	Undrained Shear Strength	(kPa)	**50**	**55**	**58**
FAILURE DETAILS	Strain at Failure	(%)	**10.2**	**12.8**	**14.1**
	Mode of Failure **Semi-plastic (bulging, shear & axial splitting)**				



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Compiled By	Date
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Contract	Contract Ref:
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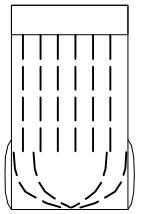
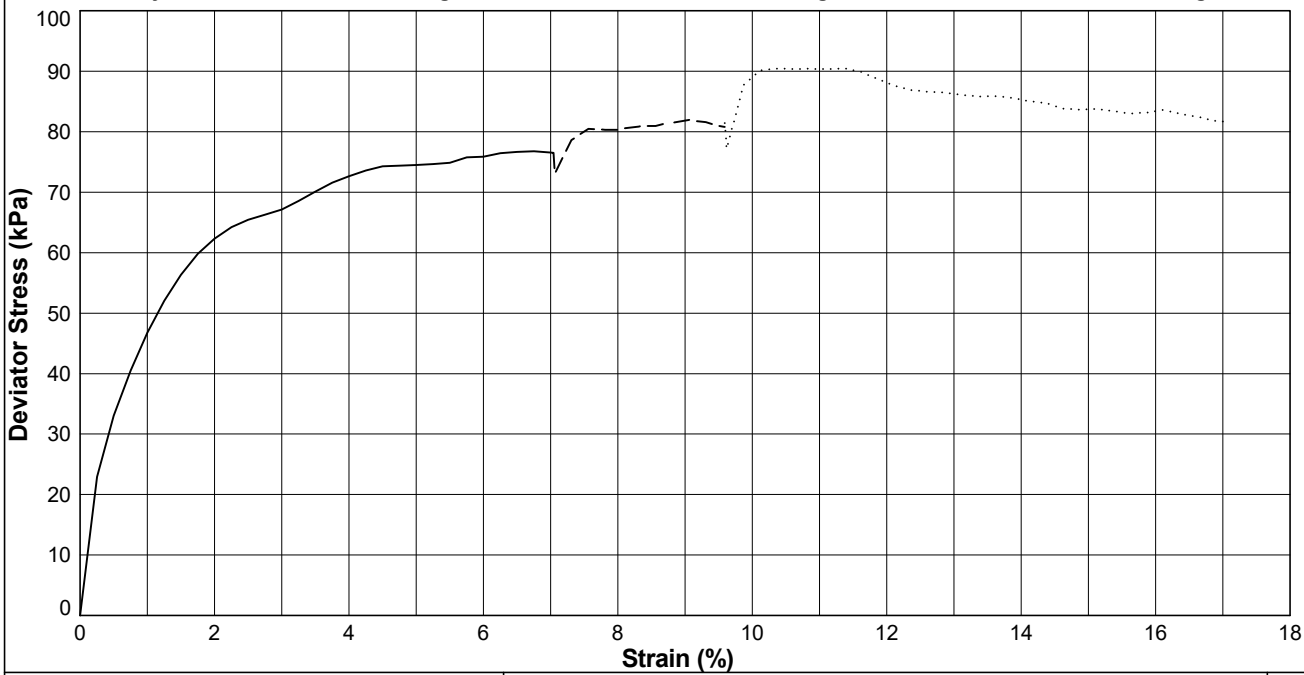
UNCONSOLIDATED UNDRAINED (QUICK) TRIAXIAL COMPRESSION TEST

In accordance with BS EN ISO 17892 Part 8 : 2018

Borehole: **BH09** Sample Ref: **18** Sample Type: **UT** Depth (m): **4.50**

Description : **Brown mottled grey slightly gravelly slightly sandy CLAY**

STAGE/SPECIMEN NUMBER			1	2	3
SPECIMEN DETAILS	Sample Condition		**Undisturbed**		
	Orientation of sample		**Vertical**		
	Diameter	(mm)	**103.32**		
	Height	(mm)	**212.26**		
	Water Content	(%)	**33.1**		
	Bulk Density	(Mg/m^3)	**1.89**		
	Dry Density	(Mg/m^3)	**1.42**		
	Void Ratio		**0.8620**		
TEST DETAILS	Membrane Type		**Rubber**	**Rubber**	**Rubber**
	Membrane Thickness	(mm)	**0.40**	**0.40**	**0.40**
	Rate of Axial Displacement	(%/min)	**1.88**	**1.88**	**1.88**
	Cell Pressure	(kPa)	**100**	**200**	**400**
	Membrane Correction	(kPa)	**0.65**	**0.82**	**0.98**
	Corrected Deviator Stress	(kPa)	**77**	**82**	**90**
	Undrained Shear Strength	(kPa)	**38**	**41**	**45**
FAILURE DETAILS	Strain at Failure	(%)	**6.8**	**9.1**	**11.4**
	Mode of Failure **Semi-plastic (bulging, shear & axial splitting)**				



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Castleford
W. Yorkshire WF10 1NJ

Compiled By	Date
LORNA WHITWORTH	10/12/24

Contract	Contract Ref:
A635 Barnsley Bus RapidTransit Route	**765865**

AGS

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - TRIAXIAL - BS - A4P | 765865_A635_BARNSLEY_BUS_RAPIDTRANSIT_ROUTE.GPJ - v10_01.
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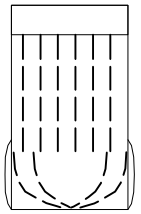
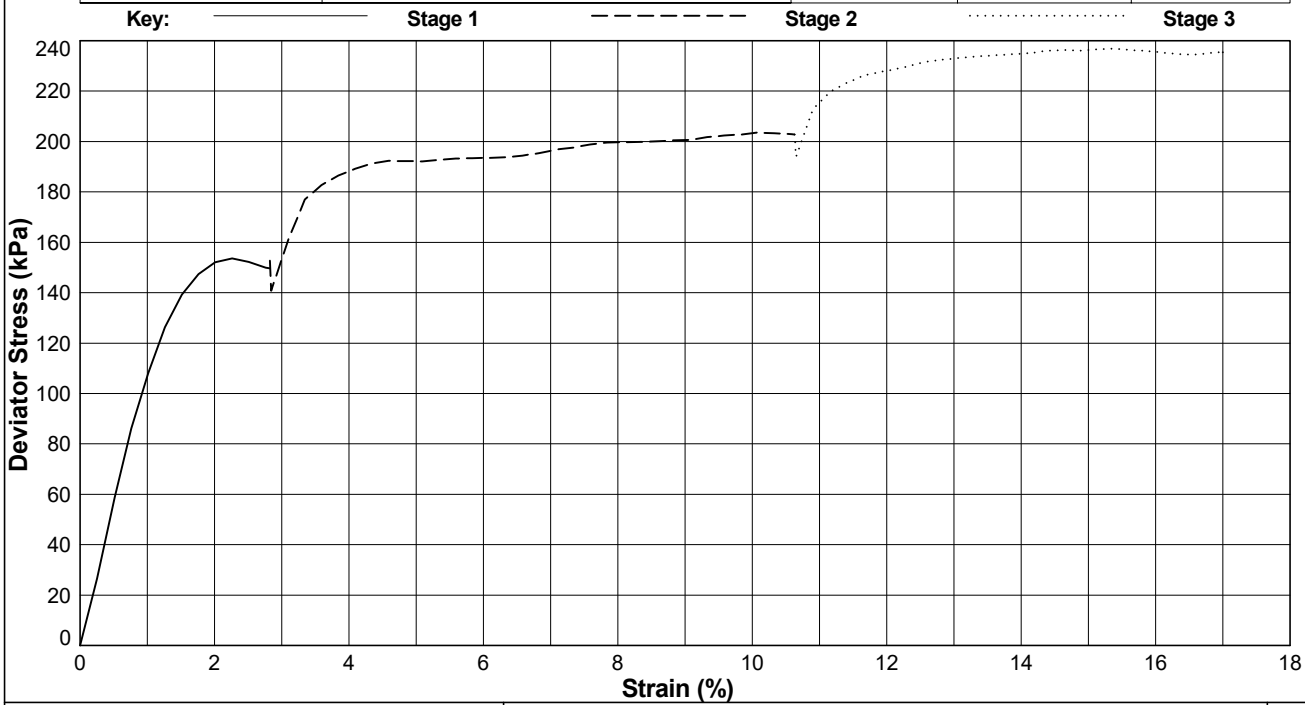
UNCONSOLIDATED UNDRAINED (QUICK) TRIAXIAL COMPRESSION TEST

In accordance with BS EN ISO 17892 Part 8 : 2018

Borehole: **BH10** Sample Ref: **15** Sample Type: **UT** Depth (m): **3.50**

Description : **Brown sandy slightly gravelly CLAY**

STAGE/SPECIMEN NUMBER			1	2	3
SPECIMEN DETAILS	Sample Condition		Undisturbed		
	Orientation of sample		Vertical		
	Diameter	(mm)	101.64		
	Height	(mm)	212.23		
	Water Content	(%)	24.9		
	Bulk Density	(Mg/m^3)	1.90		
	Dry Density	(Mg/m^3)	1.52		
	Void Ratio		0.7453		
TEST DETAILS	Membrane Type		Rubber	Rubber	Rubber
	Membrane Thickness	(mm)	0.40	0.40	0.40
	Rate of Axial Displacement	(%/min)	1.88	1.88	1.88
	Cell Pressure	(kPa)	50	100	150
	Membrane Correction	(kPa)	0.25	0.92	1.21
	Corrected Deviator Stress	(kPa)	154	204	236
	Undrained Shear Strength	(kPa)	77	102	118
FAILURE DETAILS	Strain at Failure	(%)	2.3	10.1	15.0
	Mode of Failure **Semi-plastic (bulging, shear & axial splitting)**				



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LORNA WHITWORTH	10/12/24

Contract: **A635 Barnsley Bus RapidTransit Route**

Contract Ref: **765865**

AGS

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SUMMARY OF DENSITY TESTS

In accordance with clause 7.2 of BS1377:Part 2:1990

Exploratory Position ID	Sample Ref	Depth (m)	Sample Type	Moisture Content (%)	Bulk Density (Mg/m^3)	Dry Density (Mg/m^3)	Lab
BH06	**11**	**2.50**	**UT**	**30**	**1.91**	**1.47**	**C**
BH08	**13**	**3.50**	**UT**	**34**	**1.89**	**1.41**	**C**
BH08	**20**	**6.00**	**UT**	**31**	**1.83**	**1.40**	**C**
BH09	**12**	**2.50**	**UT**	**26**	**1.99**	**1.58**	**C**
BH09	**18**	**4.50**	**UT**	**33**	**1.90**	**1.43**	**C**
BH09	**27**	**7.50**	**UT**	**12**	**2.09**	**1.87**	**C**
BH10	**15**	**3.50**	**UT**	**25**	**1.89**	**1.52**	**C**
BH10	**22**	**6.00**	**UT**	**25**	**1.97**	**1.58**	**C**
BH11	**26**	**6.50**	**D**	**16**	**2.18**	**1.88**	**C**
BH11	**35**	**9.00**	**DSPT**	**18**	**2.05**	**1.74**	**C**

Lab location: B = Bristol (BS3 4AG), C = Castleford (WF10 1NJ), H = Hemel Hempstead (HP3 9RT), T = Tonbridge (TN11 9HU)

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Compiled By	Date
LORNA WHITWORTH	**06/11/24**

Contract:	Contract Ref:
A635 Barnsley Bus RapidTransit Route	**765865**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | GrfcTbl L - SUMMARY OF DENSITY - 1377 - A4P | 765865_A635_BARNSLEY_BUS_RAPIDTRANSIT_ROUTE.GPJ - v10_01.
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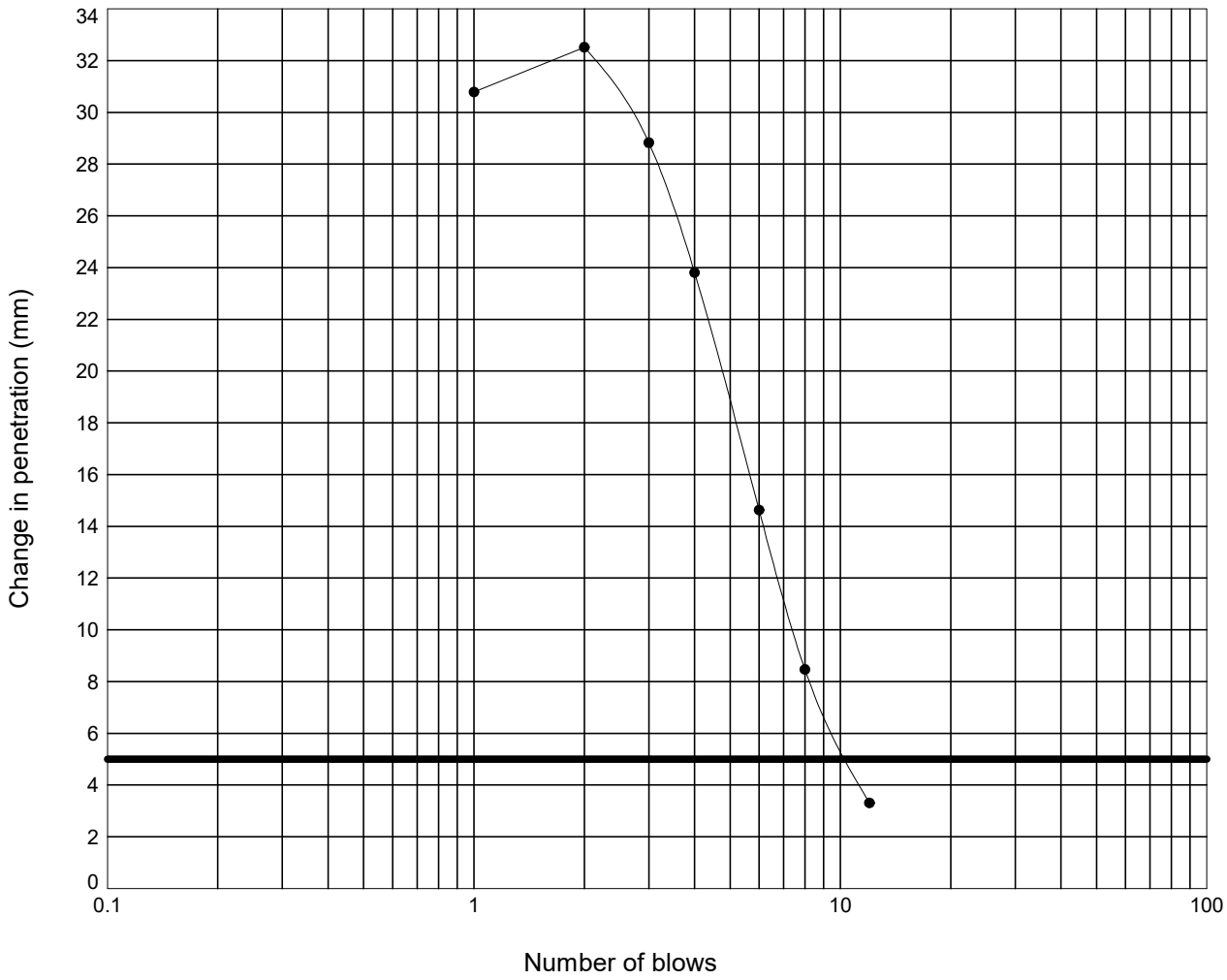
MOISTURE CONDITION VALUE

In accordance with clause 13.4 of BS1377:Part 2:2022

Borehole: **BH06** Sample Ref: **15** Sample Type: **B** Depth (m): **3.50**

Description : **Brown mottled grey slightly sandy slightly gravelly CLAY**



Moisture Content :	=	24	%
Percentage retained on 20 mm sieve :	=	2	%
Moisture Condition Value :	=	9.6	
Interpretation of curve:	=	Steepest straight line - Fig 9	

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Compiled By	Date
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Contract	Contract Ref:
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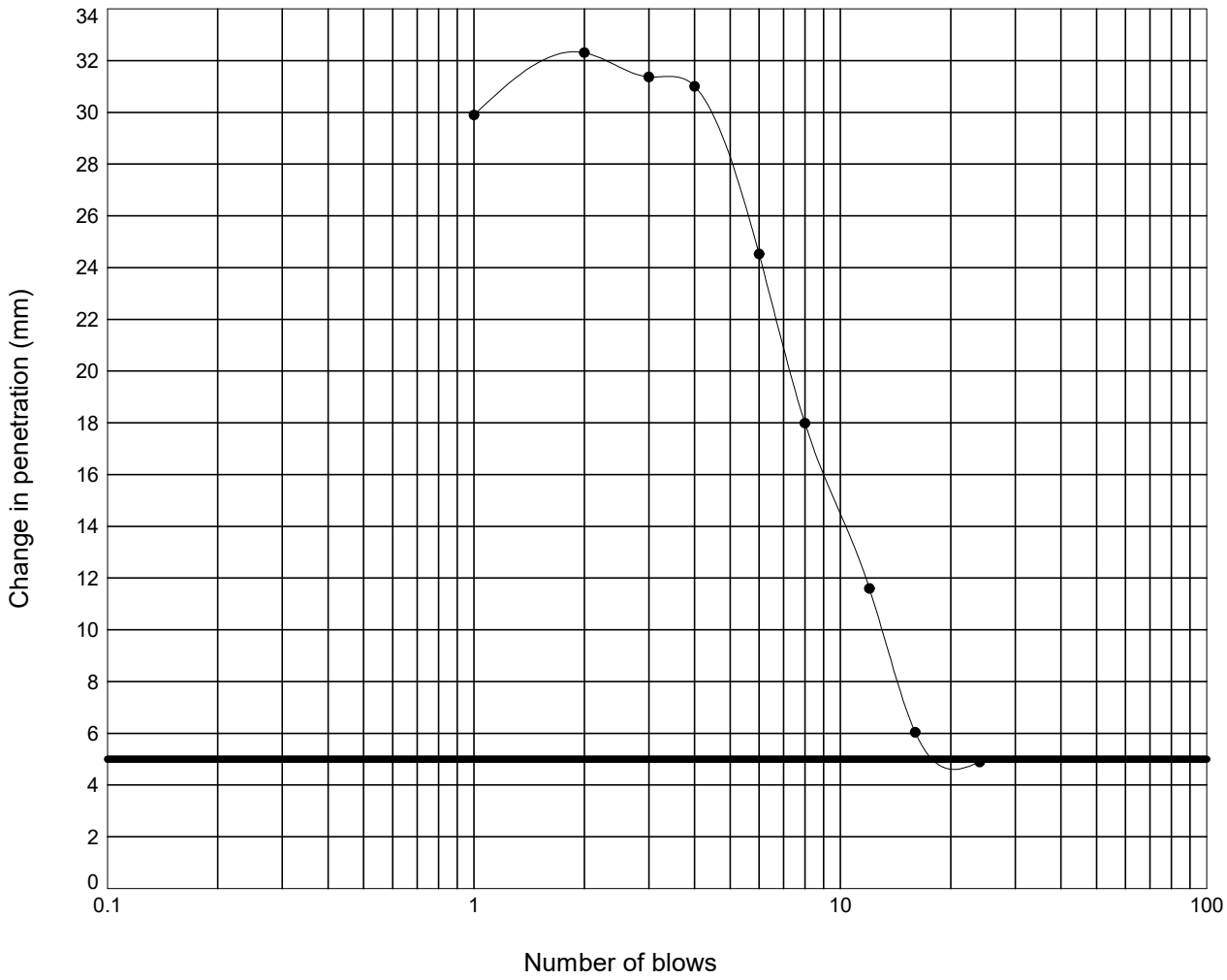
MOISTURE CONDITION VALUE

In accordance with clause 13.4 of BS1377:Part 2:2022

Borehole: **BH08** Sample Ref: **17** Sample Type: **B** Depth (m): **4.50**

Description : **Brown grey slightly gravelly slightly sandy CLAY**



Moisture Content :	=	35	%
Percentage retained on 20 mm sieve :	=	0	%
Moisture Condition Value :	=	11.5	
Interpretation of curve:	=	Steepest straight line - Fig 9	

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Compiled By	Date
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Contract	Contract Ref:
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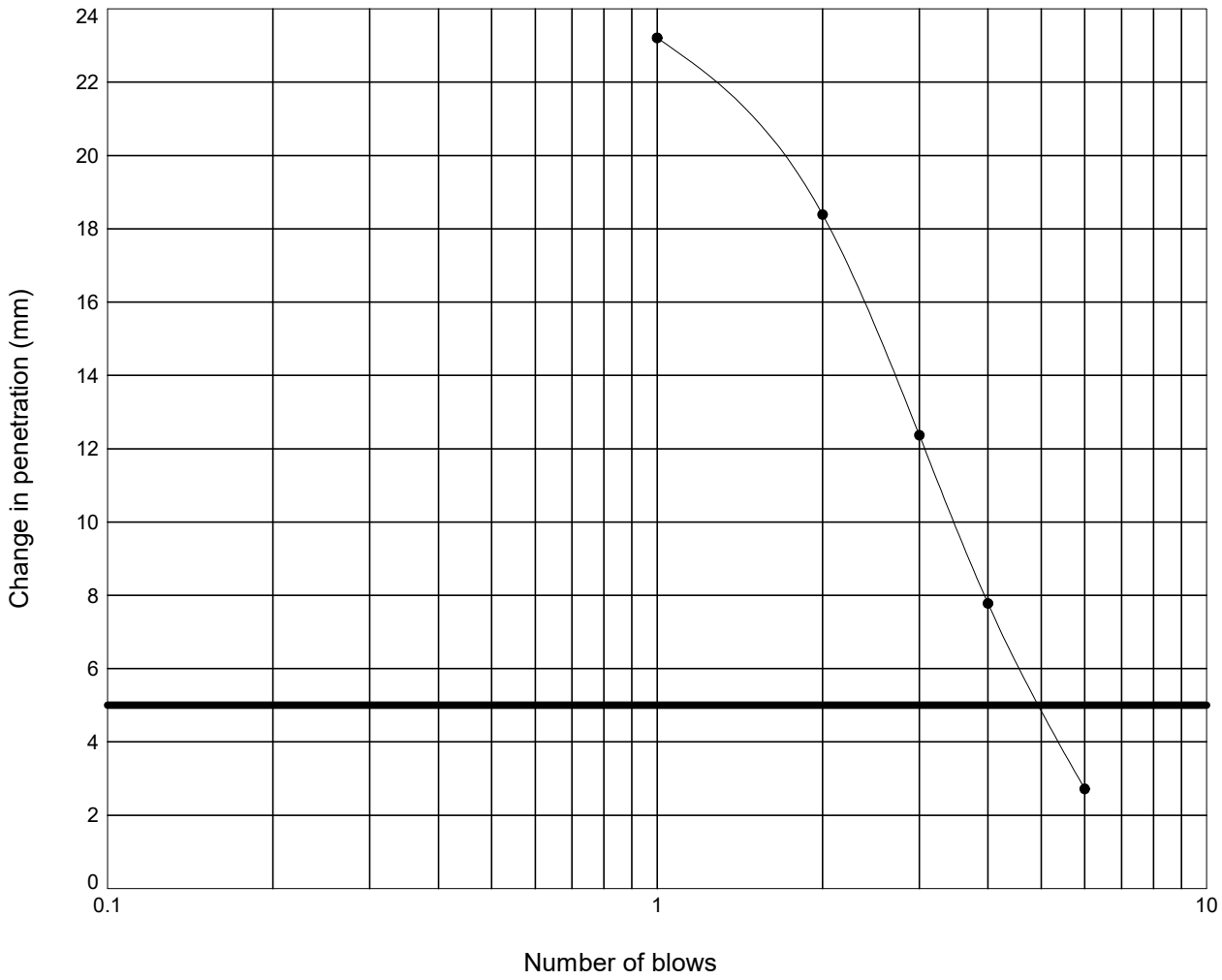
MOISTURE CONDITION VALUE

In accordance with clause 13.4 of BS1377:Part 2:2022

Borehole: **BH09** Sample Ref: **26** Sample Type: **B** Depth (m): **7.00**

Description : **Dark brown slightly sandy gravelly CLAY**



Moisture Content :	=	24	%
Percentage retained on 20 mm sieve :	=	0	%
Moisture Condition Value :	=	6.8	
Interpretation of curve:	=	Steepest straight line - Fig 9	

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Contract	Contract Ref:
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GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph L - MCV -3- NATURAL FINAL - A4P | 765865_A635_BARNSLEY_BUS_RAPIDTRANSIT_ROUTE.GPJ - v10_01.
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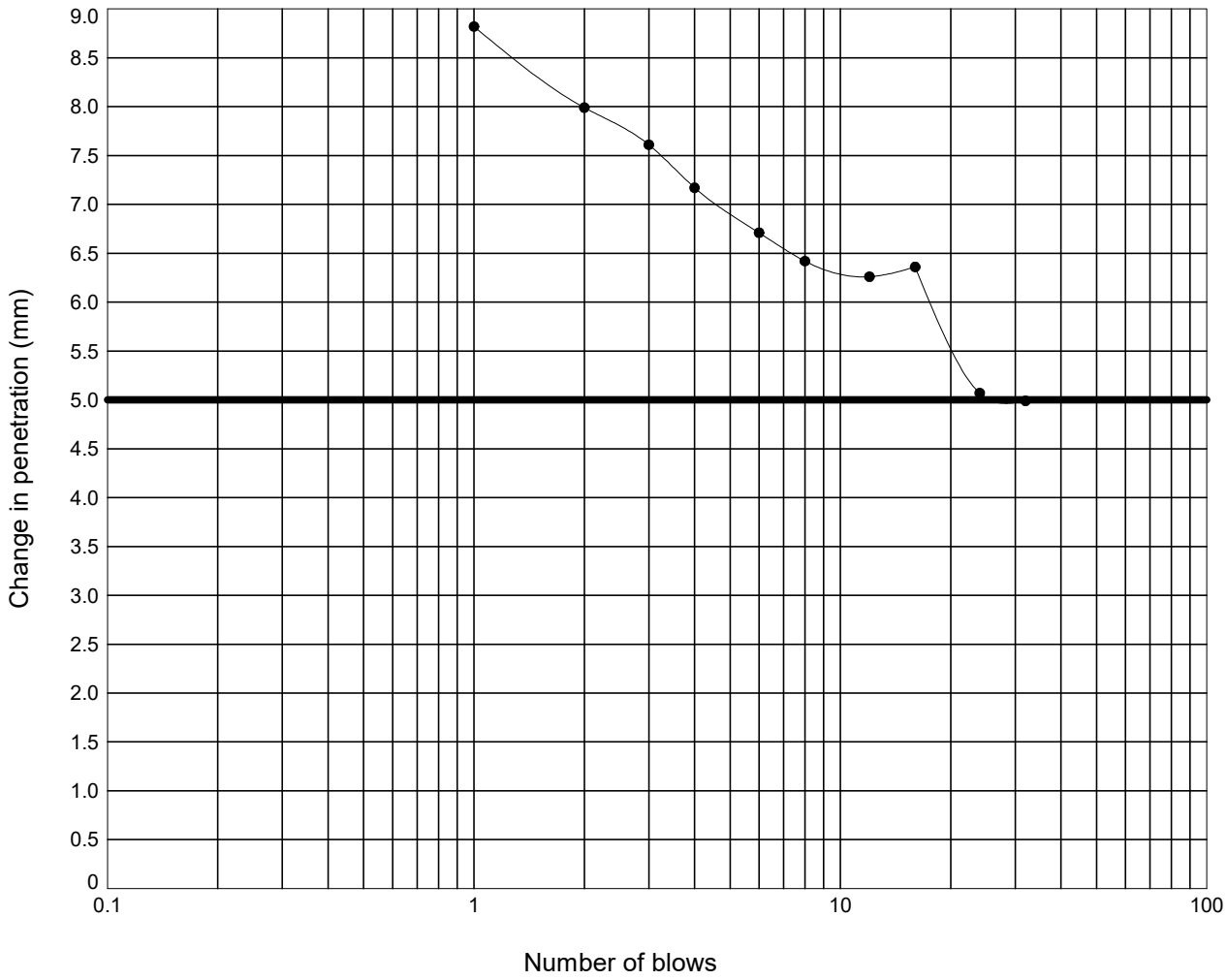
MOISTURE CONDITION VALUE

In accordance with clause 13.4 of BS1377:Part 2:2022

Borehole: **BH10** Sample Ref: **7** Sample Type: **B** Depth (m): **1.50**

Description : **Brown gravelly sandy CLAY**



Moisture Content :	=	7.5	%
Percentage retained on 20 mm sieve :	=	42	%
Moisture Condition Value :	=	13.9	
Interpretation of curve:	=	Steepest straight line - Fig 9	

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Contract	Contract Ref:
A635 Barnsley Bus RapidTransit Route	**765865**

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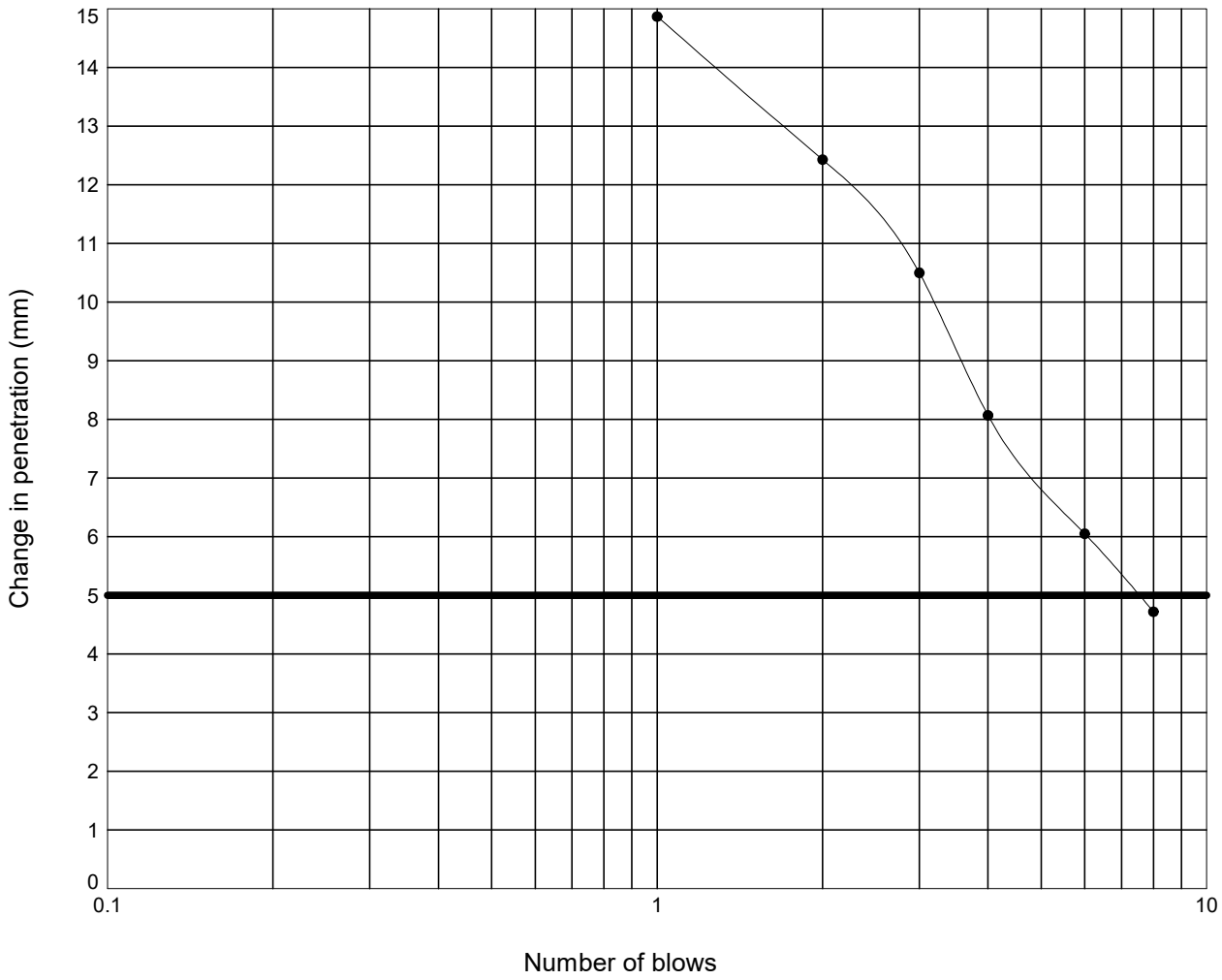
MOISTURE CONDITION VALUE

In accordance with clause 13.4 of BS1377:Part 2:2022

Borehole: **BH10** Sample Ref: **21** Sample Type: **D** Depth (m): **5.50**

Description : **Brown sandy CLAY**



Moisture Content :	=	13	%
Percentage retained on 20 mm sieve :	=	8	%
Moisture Condition Value :	=	7.6	
Interpretation of curve:	=	Steepest straight line - Fig 9	

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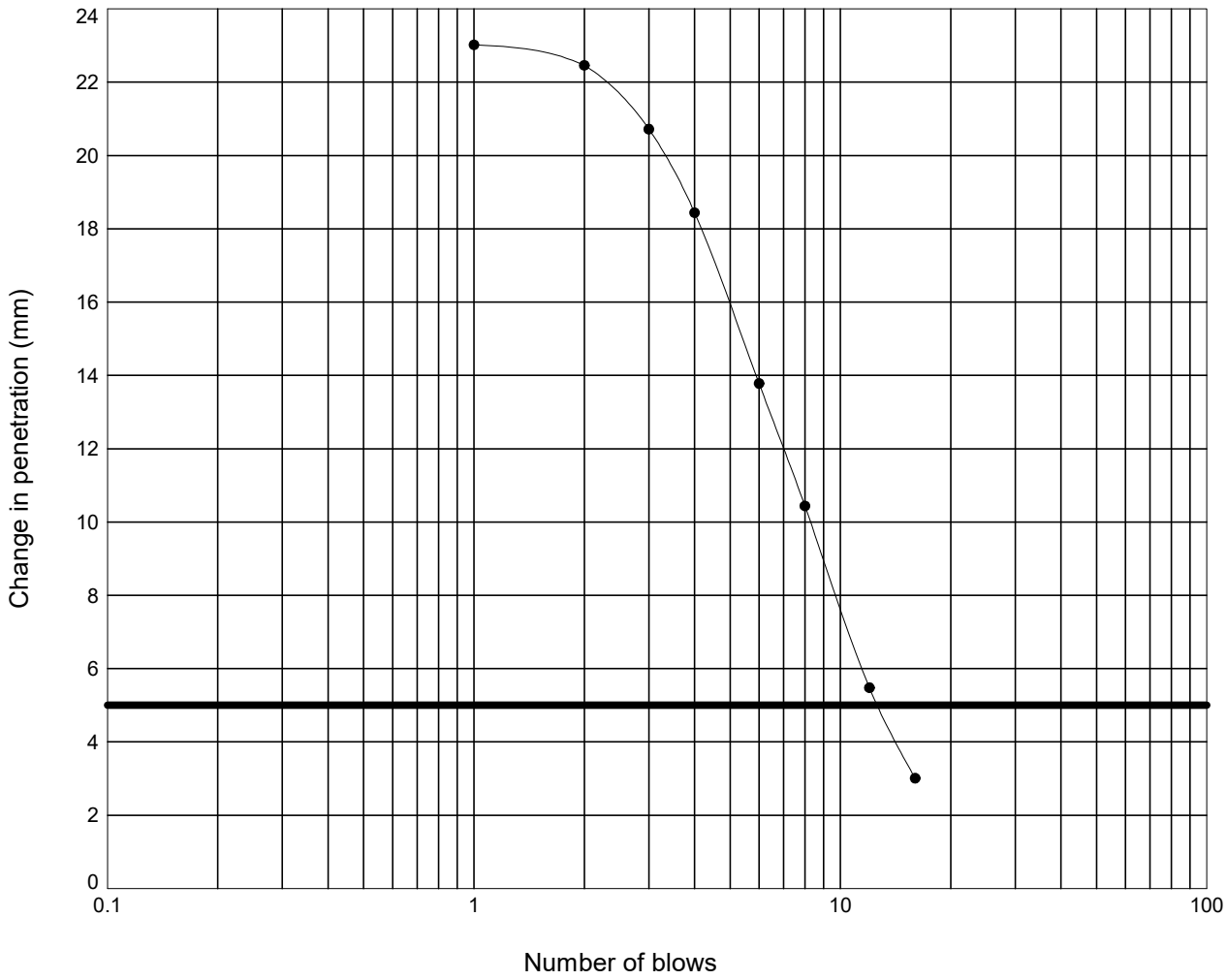
MOISTURE CONDITION VALUE

In accordance with clause 13.4 of BS1377:Part 2:2022

Borehole: **BH11** Sample Ref: **21** Sample Type: **AMAL** Depth (m): **5.00**

Amalgamation comprises: BH11 Depth:5.00 Ref:21 Type:D + BH11 Depth:4.50 Ref:18 Type:DSPT

Description : **Dark grey brown slightly gravelly slightly sandy CLAY**



Moisture Content :	=	21	%
Percentage retained on 20 mm sieve :	=	0	%
Moisture Condition Value :	=	11.0	
Interpretation of curve:	=	Steepest straight line - Fig 9	

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Compiled By	Date
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Contract	Contract Ref:
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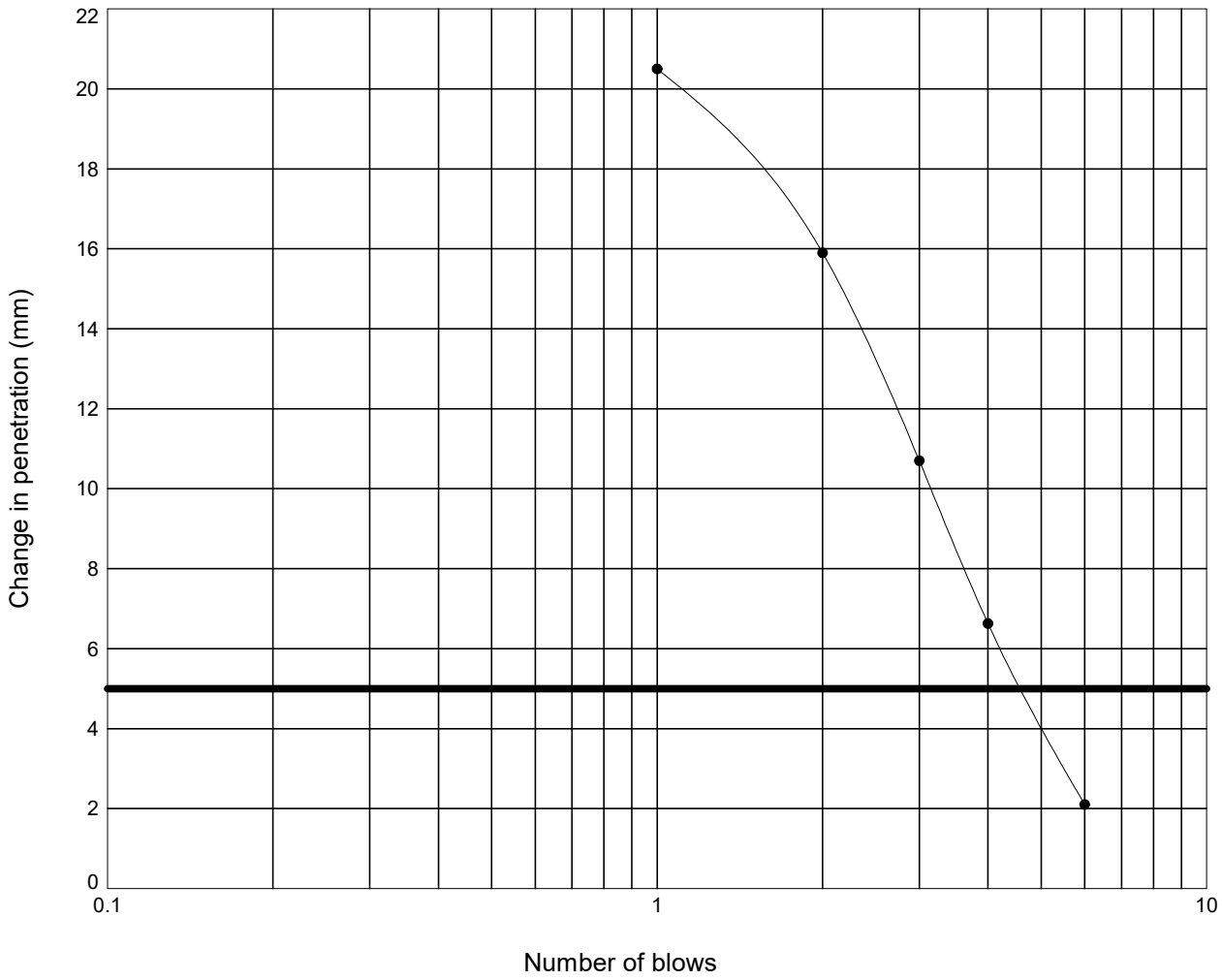
MOISTURE CONDITION VALUE

In accordance with clause 13.4 of BS1377:Part 2:2022

Borehole: **BH11** Sample Ref: **32** Sample Type: **D** Depth (m): **8.50**

Description : **Brown gravelly very sandy CLAY**



Moisture Content :	=	18	%
Percentage retained on 20 mm sieve :	=	5	%
Moisture Condition Value :	=	6.5	
Interpretation of curve:	=	Steepest straight line - Fig 9	

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Compiled By	Date
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Contract	Contract Ref:
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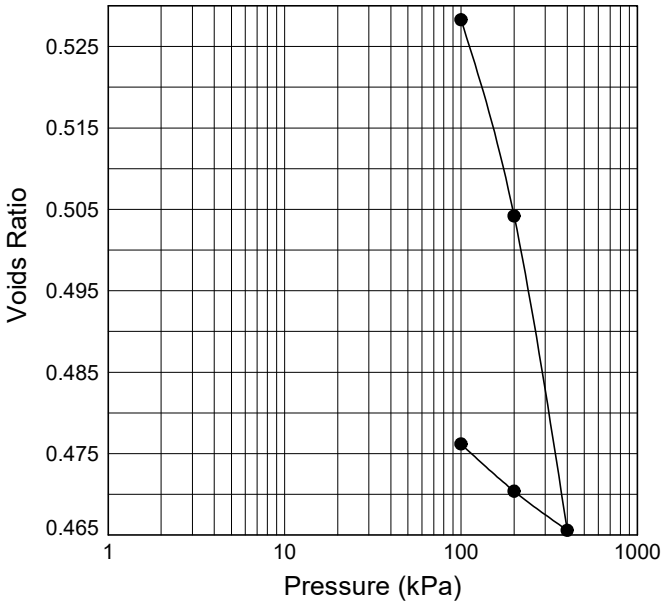
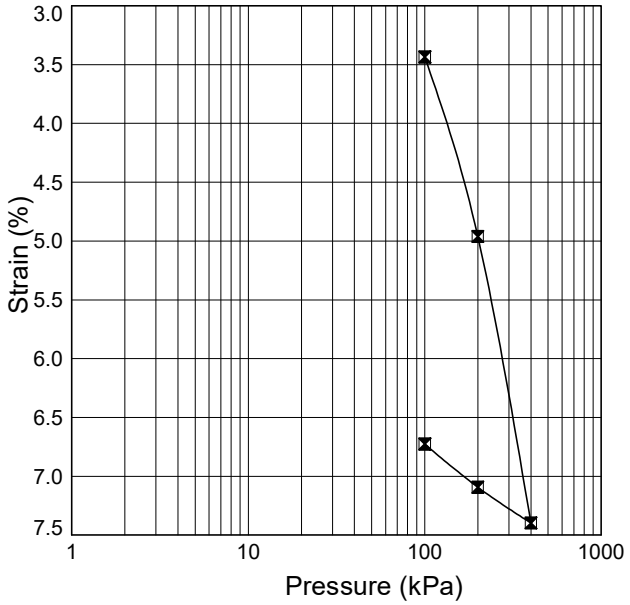
ONE-DIMENSIONAL CONSOLIDATION TEST

In accordance with BS EN ISO 17892 Part 5

Borehole: **BH09** Sample Ref: **27** Sample Type: **UT** Depth (m): **7.50**

Description : Dark brown sandy gravelly CLAY





SPECIMEN DETAILS	INITIAL	FINAL
Diameter (mm) :	74.99	74.99
Height (mm) :	19.09	17.81
Assumed Particle Density (Mg/m^3) :	2.65	2.65
Water Content (%) :	16.4	15.1
Wet Density (Mg/m^3) :	1.95	2.07
Dry Density (Mg/m^3) :	1.67	1.80
Voids Ratio :	0.5827	0.4762

TEST DETAILS

Stage	Duration (days)	Pressure (kPa)	Strain (%)	Void Ratio	M_v (m^2/MN)	T_{90} (min)	C_v (m^2/yr)	Comments etc.
Loading		0 - 100	3.436	0.5283	0.34	5	7.7	
Loading		100 - 200	4.961	0.5042	0.16	2.7	14	
Loading		200 - 400	7.397	0.4656	0.13	3.0	12	
Loading		400 - 200	7.093	0.4704	0.016	0.0	12	
Loading		200 - 100	6.726	0.4762	0.039	0.0	12	

Notes: Method of time-setting used (min): **T_{90}.** Average temperature during test (degC): **23.4**.

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Compiled By		Date
	LORNA WHITWORTH	13/11/24

Contract	Contract Ref:
A635 Barnsley Bus RapidTransit Route	**765865**

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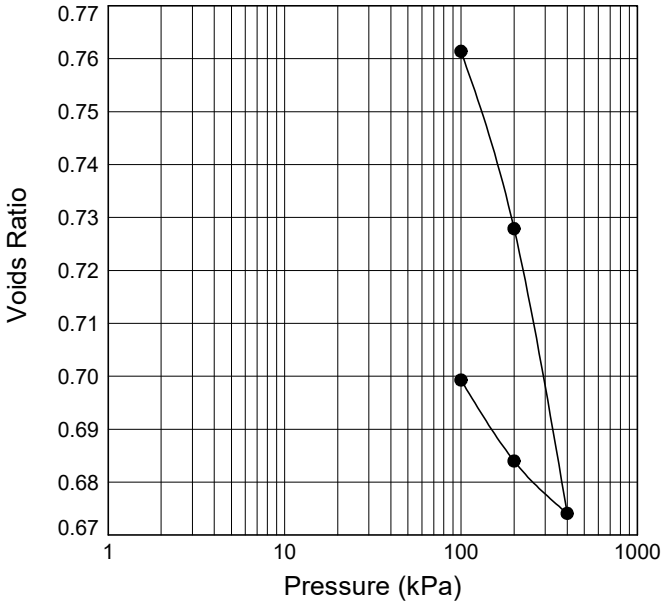
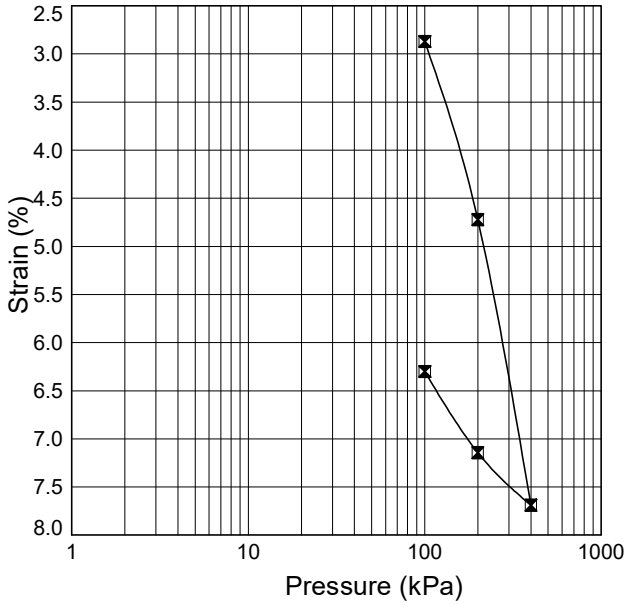
ONE-DIMENSIONAL CONSOLIDATION TEST

In accordance with BS EN ISO 17892 Part 5

Borehole: **BH10** Sample Ref: **22** Sample Type: **UT** Depth (m): **6.00**

Description : Brown mottled grey slightly sandy CLAY





SPECIMEN DETAILS	INITIAL	FINAL
Diameter (mm) :	74.97	74.97
Height (mm) :	19.08	17.88
Assumed Particle Density (Mg/m^3) :	2.65	2.65
Water Content (%) :	31.3	29.5
Wet Density (Mg/m^3) :	1.92	2.02
Dry Density (Mg/m^3) :	1.46	1.56
Voids Ratio :	0.8135	0.6993

TEST DETAILS

Stage	Duration (days)	Pressure (kPa)	Strain (%)	Void Ratio	M_v (m^2/MN)	T_{90} (min)	C_v (m^2/yr)	Comments etc.
Loading		0 - 100	2.872	0.7614	0.29	6	6.6	
Loading		100 - 200	4.722	0.7279	0.19	8	4.4	
Loading		200 - 400	7.689	0.6741	0.16	12	2.9	
Loading		400 - 200	7.144	0.6840	0.030	0.0	2.9	
Loading		200 - 100	6.300	0.6993	0.091	0.0	2.9	

Notes: Method of time-setting used (min): **T_{90}.** Average temperature during test (degC): **23.4**.

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Contract	Contract Ref:
A635 Barnsley Bus RapidTransit Route	**765865**

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envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 24/09235
Issue Number: 1 **Date:** 30 September, 2024

Client:
Structural Soils Limited (Castleford Lab)
The Potteries
Pottery Street
Castleford
West Yorkshire
UK
WF10 1NJ

Project Manager: *Use Castleford Lab/Jessica/Luke/Charlotte
Project Name: A635 Barnsley
Project Ref: 765865-2
Order No: N/A
Date Samples Received: 24/09/24
Date Instructions Received: 25/09/24
Date Analysis Completed: 30/09/24

Approved by:

Gemma Berrisford
Deputy Client Services Supervisor

Envirolab Job Number: 24/09235

Client Project Name: A635 Barnsley

Client Project Ref: 765865-2

Lab Sample ID	24/09235/1	24/09235/2	24/09235/3					Units	Limit of Detection	Method ref
Client Sample No	101	102	101							
Client Sample ID	WS21	WS22	WS26							
Depth to Top	0.00	0.00	0.00							
Depth To Bottom	0.15	0.40	0.10							
Date Sampled										
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	4A	4A	4AE							
% Stones >10mm$_A$	22.5	31.5	23.9					% w/w	0.1	A-T-044
pH BRE$_D$$^{M\#}$	10.80	9.96	10.24					pH	0.01	A-T-031s
Sulphate BRE (water sol 2:1)$_D$$^{M\#}$	26	<20	65					mg/l	10	A-T-026s
Sulphate BRE (acid sol)$_D$$^{M\#}$	0.11	0.05	0.14					% w/w	0.02	A-T-028s
Sulphur BRE (total)$_D$	0.07	0.05	0.07					% w/w	0.01	A-T-024s

Report Notes

General

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•The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client and can affect the validity of results.
•The results reported herein relate only to the material supplied to the laboratory.
•The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
•Analytical results reflect the quality of the sample at the time of analysis only.
•Opinions and Interpretations expressed are outside our scope of accreditation.
•A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
•If a sample is outside of the calibration range or affected by interferences then it may need diluting. This will result in the limit of detection (LOD) being raised.
•Subcontracted Analysis: Please see the appended report for any deviations, current LODs and accreditation status of the test.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "D" on Asbestos	Analysis performed on a dried aliquot of sample provided.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
Trace	Asbestos found not suitable for Gravimetric Quantification – not enough to accurately weigh.
N/A	Not applicable

Asbestos

Identification: Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
"Trace Asbestos Identified" will be reported if there is not enough present to verify the type.
Quantification: Generally a 2 stage process including visual identification, hand picking and weighing, and fibre counting. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres). "TRACE" will be reported as a quantification result.
PLEASE INFORM THE LABORATORY IF YOU WOULD LIKE THE STAGE 3 SEDIMENTATION PROCESS CARRIED OUT. Note this will be subcontracted.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^0C / 11550µS/cm @ 20^0C fall outside the calibration range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: Structural Soils Limited (Castleford Lab), The Potteries, Pottery Street, Castleford, West Yorkshire, UK, WF10 1NJ

Project: A635 Barnsley

Clients Project No: 765865-2

Project No: 24/09235

Date Received: 25/09/2024 (am)

Cool Box Temperatures (°C): 18.1

Lab Sample ID	24/09235/1	24/09235/2	24/09235/3
Client Sample No	101	102	101
Client Sample ID/Depth	WS21 0.00-0.15m	WS22 0.00-0.40m	WS26 0.00-0.10m
Date Sampled			
Deviation Code			
E (no date)	✓	✓	✓

Key
E (no date) *No sampling date provided (all results affected if not provided)*

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	24/09235/1	24/09235/2	24/09235/3
Client Sample No	101	102	101
Client Sample ID/Depth	WS21 0.00-0.15m	WS22 0.00-0.40m	WS26 0.00-0.10m
Date Sampled			
A-T-024s	30/09/2024	30/09/2024	30/09/2024
A-T-026s	30/09/2024	30/09/2024	30/09/2024
A-T-028s	27/09/2024	27/09/2024	27/09/2024
A-T-031s	27/09/2024	27/09/2024	27/09/2024
A-T-044	27/09/2024	27/09/2024	27/09/2024

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 24/09797
Issue Number: 1 **Date:** 14 October, 2024

Client:
Structural Soils Limited (Castleford Lab)
The Potteries
Pottery Street
Castleford
West Yorkshire
UK
WF10 1NJ

Project Manager: *Use Castleford Lab/Jessica/Luke/Charlotte
Project Name: A635 BARNSLEY
Project Ref: 765865-4
Order No: N/A
Date Samples Received: 09/10/24
Date Instructions Received: 10/10/24
Date Analysis Completed: 14/10/24

Approved by:

Richard Wong
Client Manager

Envirolab Job Number: 24/09797

Client Project Name: A635 BARNSLEY

Client Project Ref: 765865-4

Lab Sample ID	24/09797/1							Units	Limit of Detection	Method ref
Client Sample No	102									
Client Sample ID	WS16									
Depth to Top	1.20									
Depth To Bottom	1.40									
Date Sampled										
Sample Type	SOIL - ES									
Sample Matrix Code	4ACED									
% Stones >10mm$_A$	8.5							% w/w	0.1	A-T-044
pH BRE$_D$$^{M\#}$	8.12							pH	0.01	A-T-031s
Sulphate BRE (water sol 2:1)$_D$$^{M\#}$	13							mg/l	10	A-T-026s
Sulphate BRE (acid sol)$_D$$^{M\#}$	0.07							% w/w	0.02	A-T-028s
Sulphur BRE (total)$_D$	0.07							% w/w	0.01	A-T-024s

Report Notes

General

•This report shall not be reproduced, except in full, without written approval from Envirolab.
•The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client and can affect the validity of results.
•The results reported herein relate only to the material supplied to the laboratory.
•The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
•Analytical results reflect the quality of the sample at the time of analysis only.
•Opinions and Interpretations expressed are outside our scope of accreditation.
•A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
•If a sample is outside of the calibration range or affected by interferences then it may need diluting. This will result in the limit of detection (LOD) being raised.
•Subcontracted Analysis: Please see the appended report for any deviations, current LODs and accreditation status of the test.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "D" on Asbestos	Analysis performed on a dried aliquot of sample provided.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
Trace	Asbestos found not suitable for Gravimetric Quantification – not enough to accurately weigh.
N/A	Not applicable

Asbestos

Identification: Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
"Trace Asbestos Identified" will be reported if there is not enough present to verify the type.
Quantification: Generally a 2 stage process including visual identification, hand picking and weighing, and fibre counting. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres). "TRACE" will be reported as a quantification result.
PLEASE INFORM THE LABORATORY IF YOU WOULD LIKE THE STAGE 3 SEDIMENTATION PROCESS CARRIED OUT. Note this will be subcontracted.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^0C / 11550µS/cm @ 20^0C fall outside the calibration range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: Structural Soils Limited (Castleford Lab), The Potteries, Pottery Street, Castleford, West Yorkshire, UK, WF10 1NJ

Project: A635 BARNSLEY

Clients Project No: 765865-4

Project No: 24/09797

Date Received: 10/10/2024 (am)

Cool Box Temperatures (°C): 7.4

Lab Sample ID	24/09797/1
Client Sample No	102
Client Sample ID/Depth	WS16 1.20-1.40m
Date Sampled	
Deviation Code	
E (no date)	✓

Key
E (no date) *No sampling date provided (all results affected if not provided)*

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	24/09797/1
Client Sample No	102
Client Sample ID/Depth	WS16 1.20-1.40m
Date Sampled	
A-T-024s	14/10/2024
A-T-026s	14/10/2024
A-T-028s	14/10/2024
A-T-031s	14/10/2024
A-T-044	14/10/2024

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 24/09234
Issue Number: 1 **Date:** 27 September, 2024

Client:
Structural Soils Limited (Castleford Lab)
The Potteries
Pottery Street
Castleford
West Yorkshire
UK
WF10 1NJ

Project Manager: *Use Castleford Lab/Jessica/Luke/Charlotte
Project Name: A635 Barnsley
Project Ref: 765865-6
Order No: N/A
Date Samples Received: 24/09/24
Date Instructions Received: 25/09/24
Date Analysis Completed: 27/09/24

Approved by:

Richard Wong
Client Manager

Envirolab Job Number: 24/09234

Client Project Name: A635 Barnsley

Client Project Ref: 765865-6

Lab Sample ID	24/09234/1							Units	Limit of Detection	Method ref
Client Sample No	6									
Client Sample ID	BH15									
Depth to Top	0.00									
Depth To Bottom	1.10									
Date Sampled										
Sample Type	SOLID									
Sample Matrix Code	7									
% Stones >10mm$_A$	<0.1							% w/w	0.1	A-T-044
pH BRE$_D$$^{M\#}$	9.17^U							pH	0.01	A-T-031s
Sulphate BRE (water sol 2:1)$_D$$^{M\#}$	16^U							mg/l	10	A-T-026s
Sulphate BRE (acid sol)$_D$$^{M\#}$	0.06^U							% w/w	0.02	A-T-028s
Sulphur BRE (total)$_D$	0.03							% w/w	0.01	A-T-024s

Report Notes

General

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•The results reported herein relate only to the material supplied to the laboratory.
•The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
•Analytical results reflect the quality of the sample at the time of analysis only.
•Opinions and Interpretations expressed are outside our scope of accreditation.
•A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
•If a sample is outside of the calibration range or affected by interferences then it may need diluting. This will result in the limit of detection (LOD) being raised.
•Subcontracted Analysis: Please see the appended report for any deviations, current LODs and accreditation status of the test.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "D" on Asbestos	Analysis performed on a dried aliquot of sample provided.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
Trace	Asbestos found not suitable for Gravimetric Quantification – not enough to accurately weigh.
N/A	Not applicable

Asbestos

Identification: Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
"Trace Asbestos Identified" will be reported if there is not enough present to verify the type.
Quantification: Generally a 2 stage process including visual identification, hand picking and weighing, and fibre counting. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres). "TRACE" will be reported as a quantification result.
PLEASE INFORM THE LABORATORY IF YOU WOULD LIKE THE STAGE 3 SEDIMENTATION PROCESS CARRIED OUT. Note this will be subcontracted.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^0C / 11550µS/cm @ 20^0C fall outside the calibration range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: Structural Soils Limited (Castleford Lab), The Potteries, Pottery Street, Castleford, West Yorkshire, UK, WF10 1NJ

Project: A635 Barnsley

Clients Project No: 765865-6

Project No: 24/09234

Date Received: 25/09/2024 (am)

Cool Box Temperatures (°C): 15.8

Lab Sample ID	24/09234/1
Client Sample No	6
Client Sample ID/Depth	BH15 0.00-1.10m
Date Sampled	
Deviation Code	
E (no date)	✓

Key
E (no date) *No sampling date provided (all results affected if not provided)*

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	24/09234/1
Client Sample No	6
Client Sample ID/Depth	BH15 0.00-1.10m
Date Sampled	
A-T-024s	27/09/2024
A-T-026s	27/09/2024
A-T-028s	26/09/2024
A-T-031s	27/09/2024
A-T-044	26/09/2024

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

TEST REPORT

SOIL ENGINEERING

Serial number: LT1983 Date of issue: 31/10/2024

UKAS TESTING 1265

Issued by Soil Engineering Geoservices Limited,
Parkside Lane,
Dewsbury Road,
Leeds
LS11 5SX.
Tel: 0113 2711111
Fax: 0113 2760472
Email: enquiries@soil-engineering.co.uk

Authorised signatory

S. Harper

P. A. Rodgers (Technical Manager)
K. A. Walker (Laboratory Manager)
S. D. Harper √ (Laboratory Production Manager)

Customer name Structural Soils Ltd
Address The Potteries
Pottery Street
Castleford
West Yorkshire
WF10 1NJ

Contract name A635 Barnsley Bus Rapid Transit Route
Your reference 765865

Dates of receipt of samples 04/10/2024

Dates of testing 07/10/2024 to 30/10/2024

Sampling was not performed by the Laboratory of Soil Engineering.

Testing was performed on 109 number of samples received in good condition.

Opinions and interpretations expressed herein are outside the scope of our UKAS accreditation.

Results reported relate only to the samples tested.

Tests marked 'Not UKAS' in this report are not included in the UKAS accreditation schedule for our laboratory. These results will appear in italics on any summary of tests.

Samples will be retained for 28 days from date of issue of this report and then be disposed of, unless we receive written instruction to the contrary

This test report shall not be reproduced except in full without the written permission of Soil Engineering Geoservices Limited.

Key to Laboratory Summary Sheets

Common to all summaries				
Sample Type	U	Undisturbed sample	D	Small disturbed sample
	P	Piston sample	B	Bulk disturbed sample
	TW	Thin walled sample	BLK	Block sample
	L	Liner sample	C	Rock core
	AMAL	Amalgamated sample		
Test status	Any result in *italics* indicates a test that is not within the scope of the UKAS accreditation for this laboratory.			
Summary of Laboratory Soil Tests: Index / Classification Tests				
Particle density	p	Small pyknometer method	g	Gas jar method
Plastic index	N/P	Non plastic, although liquid limit will have been determined if requested		
Particle size (PSD)	1	Following value in silt column denotes combined clay and silt fraction		
	p	Following value in clay column denotes sedimentation by pipette, else sedimentation is by hydrometer.		
Summary of Laboratory Soil Tests: Strength and Permeability Tests				
Triaxial	UU	Single stage unconsolidated quick undrained	UUM	Multi stage unconsolidated quick undrained
	UU3	Set of 3 unconsolidated quick undrained	CU	Single stage consolidated undrained
	CUM	Multi stage consolidated undrained	CU3	Set of 3 consolidated undrained
	CD	Single stage consolidated drained	CDM	Multi stage consolidated drained
	CD3	Set of 3 consolidated drained		
	Note that single stage tests are reported assuming f = 0 for total stress and c' = 0 for effective stress			
Consol	Oed	One-dimensional oedometer	Hyd	Hydraulic cell consolidation
	m_v	coefficient of compressibility quoted for p0 to p0 + 100kPa, where determined		
Permeability	C	Constant head permeability	T	Triaxial permeability
Shearbox	SSB	Small shear box	LSB	Large shear box
	p	Peak value	r	Residual value
	RS	Ring shear		
Summary of Laboratory Soil Re-Use Test				
MCV	s	MCV value at natural or specified moisture content	int	Intercept of calibration line in MCV calibration
Summary of Laboratory Rock Strength Tests				
Point Load Type	D	Diametral	A	Axial
(Combination of)	I	Irregular lump	B	Block
	L	Test performed parallel to planes of weakness		
	P	Test performed perpendicular to planes of weakness		
	X	Invalid failure of point load (not broken between points of load application)		
Summary of Laboratory Rock Materials Tests				
Ten% fines	w	Soaked test	d	Dry test
Point Load Index Result				
Point Load Type	D	Diametral	A	Axial
(Combination of)	I	Irregular lump	B	Block
	L	Parallel to planes of weakness	P	Perpendicular to planes of weakness
	X	Invalid failure of point load (not broken between points of load application)		
Dimensions	W	Diameter of core or average smallest width perpendicular to axis of loading in a block or irregular lump		
	D	Distance between platens when just in contact with specimen		
	D'	Distance between platens at point of failure		
	De	Equivalent core diameter	Is	P/De^2
	Is(50)	F x Is	F	$(De/50)^{0.45}$
	Is(50) point load strength index corrected for a diametral test of core diameter 50mm			
	For Axial/Lump tests $De^2 = (4/Pi) \times (W \times D')$		For Diametral tests $De^2 = D \times D'$	

Important note: summary sheets are provided for convenience and in no way replace individual test result sheets which shall, without exception, be regarded as the definitive result.

Project Name	A635 Barnsley Bus Rapid Transit Route	**Summary Of Laboratory Rock Strength Tests**	
Project No.	LT1983		
Engineer	Structural Soils Ltd		
Employer	Structural Soils Ltd		

Hole ID	Sample depth m	Sample no.	Sample type	Specimen depth m	Specimen no.	Water Content	Bulk Density	Dry Density	Particle density	Point load			UCS	Brazil	Porosity	Elastic Modulus	Posissons Ratio
										Type	Is	Is50					
						%	kg/m³	kg/m³	Mg/m³		MN/m²	MN/m²	MN/m²	MN/m²	%	GPa	
BH01	3.80	8	C	3.80	01					A+P+X	0.01	0.01					
BH01	3.80	8	C	3.80	02					A+P	0.01	0.02					
BH01	4.90	9	C	4.90	01					D+L	0.00	0.00					
BH01	4.90	9	C	4.90	02					A+P	0.01	0.01					
BH01	6.30	10	C	6.30	01					A+P+X	0.03	0.04					
BH01	6.30	10	C	6.30	02					A+P	0.04	0.06					
BH01	7.50	11	C	7.50	01					A+P+X	0.27	0.33					
BH01	7.50	11	C	7.50	02					A+P+X	0.38	0.48					
BH01	9.85	13	C	9.85	01					A+P	0.60	0.78					
BH01	9.85	13	C	9.85	02					I+L+X	0.03	0.04					
BH01	10.05	14	C	10.05	01					D+L	0.32	0.44					
BH01	10.05	14	C	10.05	02					A+P	0.44	0.59					
BH01	12.55	16	C	12.55	01					D+L	1.50	1.53					
BH01	12.55	16	C	12.55	02					A+P	1.34	1.33					
BH01	15.40	18	C	15.40	01					D+L	0.68	0.92					
BH01	15.40	18	C	15.40	02					A+P	1.37	1.69					
BH02	4.00	12	C	4.00	01					D+L	0.00	0.01					
BH02	4.00	12	C	4.00	02					A+P+X	0.01	0.02					
BH02	5.35	13	C	5.35	01					D	0.00	0.00					
BH02	5.35	13	C	5.35	02					A	0.05	0.06					
BH02	5.90	14	C	5.90	01					D+L	0.00	0.00					
BH02	5.90	14	C	5.90	02					A+P+X	0.01	0.01					

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Project Name	A635 Barnsley Bus Rapid Transit Route	**Summary Of Laboratory Rock Strength Tests**	
Project No.	LT1983		
Engineer	Structural Soils Ltd		
Employer	Structural Soils Ltd		

Hole ID	Sample depth m	Sample no.	Sample type	Specimen depth m	Specimen no.	Water Content	Bulk Density	Dry Density	Particle density	Point load			UCS	Brazil	Porosity	Elastic Modulus	Posissons Ratio
										Type	Is	Is50					
						%	kg/m³	kg/m³	Mg/m³		MN/m²	MN/m²	MN/m²	MN/m²	%	GPa	
BH02	7.90	15	C	7.90	01					D+L	0.01	0.02					
BH02	7.90	15	C	7.90	02					A+P+X	0.14	0.19					
BH02	9.45	17	C	9.45	01					D+L	0.02	0.02					
BH02	9.45	17	C	9.45	02					A+P+X	0.22	0.28					
BH02	12.70	19	C	12.70	01					A+P	0.11	0.15					
BH02	12.70	19	C	12.70	02					A+P	0.12	0.16					
BH02	14.50	21	C	14.50	01					D+L	0.62	0.84					
BH02	14.50	21	C	14.50	02					A+P	1.42	1.78					
BH02	15.70	22	C	15.70	01	6.4	2400	2260					40.3				
BH02	16.15	23	C	16.15	01					D+L	0.00	0.00					
BH02	16.15	23	C	16.15	02					A+P+X	0.11	0.14					
BH03	3.40	5	C	3.40	01					A+P	0.02	0.02					
BH03	3.40	5	C	3.40	02					A+P+X	0.01	0.01					
BH03	4.55	6	C	4.55	01					D+L	0.00	0.00					
BH03	4.55	6	C	4.55	02					A+P+X	0.02	0.03					
BH03	5.95	7	C	5.95	01					A+P+X	0.03	0.04					
BH03	5.95	7	C	5.95	02					A+P+X	0.16	0.18					
BH03	8.00	8	C	8.00	01					A+P+X	0.01	0.01					
BH03	8.00	8	C	8.00	02					A+P+X	0.02	0.02					
BH06	7.35	12	C	7.35	01					A+P+X	0.01	0.02					
BH06	7.35	12	C	7.35	02					A+P+X	0.04	0.06					
BH06	9.00	13	C	9.00	01					A+P+X	0.08	0.10					

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Project No.	LT1983		
Engineer	Structural Soils Ltd		
Employer	Structural Soils Ltd		

Hole ID	Sample depth m	Sample no.	Sample type	Specimen depth m	Specimen no.	Water Content	Bulk Density	Dry Density	Particle density	Point load			UCS	Brazil	Porosity	Elastic Modulus	Posissons Ratio
										Type	Is	Is50					
						%	kg/m³	kg/m³	Mg/m³		MN/m²	MN/m²	MN/m²	MN/m²	%	GPa	
BH06	9.00	13	C	9.00	02					I+P	0.47	0.47					
BH06	10.90	14	C	10.90	01					A+P	0.42	0.51					
BH06	10.90	14	C	10.90	02					I+P+X	0.18	0.22					
BH06	12.95	15	C	12.95	01					I+L	0.19	0.25					
BH06	12.95	15	C	12.95	02					A+P	0.46	0.59					
BH06	14.40	16	C	14.40	01					A+P+X	0.27	0.33					
BH06	14.40	16	C	14.40	02					A+P	0.23	0.28					
BH06	14.90	17	C	14.90	01					D+L	0.14	0.20					
BH06	14.90	17	C	14.90	02					A+P	0.07	0.08					
BH06	16.40	18	C	16.40	01	3.5	2520	2430					33.7				
BH06	18.05	19	C	18.05	01					D+L+X	0.17	0.24					
BH06	18.05	19	C	18.05	02					A+P+X	1.19	1.51					
BH06	19.48	21	C	19.48	01					D+L	0.78	1.09					
BH06	19.48	21	C	19.48	02					A+P	1.66	2.18					
BH07	6.10	11	C	6.10	01					D+L	0.34	0.35					
BH07	6.10	11	C	6.10	02					A+P+X	0.25	0.27					
BH07	6.49	12	C	6.49	01					D+L	0.11	0.15					
BH07	6.49	12	C	6.49	02					A+P	0.51	0.66					
BH07	7.19	13	C	7.19	01	3.4	2550	2460					27.9				
BH07	7.75	14	C	7.75	01					A+P+X	0.24	0.34					
BH07	7.75	14	C	7.75	02					A+P+X	0.34	0.46					
BH07	7.85	15	C	7.85	01					D+L+X	0.08	0.11					

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Project No.	LT1983		
Engineer	Structural Soils Ltd		
Employer	Structural Soils Ltd		

Hole ID	Sample depth m	Sample no.	Sample type	Specimen depth m	Specimen no.	Water Content	Bulk Density	Dry Density	Particle density	Point load			UCS	Brazil	Porosity	Elastic Modulus	Posissons Ratio
										Type	Is	Is50					
						%	kg/m³	kg/m³	Mg/m³		MN/m²	MN/m²	MN/m²	MN/m²	%	GPa	
BH07	7.85	15	C	7.85	02					A+P+X	0.40	0.51					
BH07	9.00	16	C	9.00	01					D+L	0.11	0.15					
BH07	9.00	16	C	9.00	02					A+P+X	0.41	0.54					
BH07	9.23	17	C	9.23	01					D+L	0.03	0.04					
BH07	9.23	17	C	9.23	02					A+P	0.64	0.81					
BH08	11.80	31	C	11.80	01					A+X	0.10	0.11					
BH08	11.80	31	C	11.80	02					A	0.37	0.40					
BH08	13.50	32	C	13.50	01	2.9	2580	2510					45.3				
BH08	13.82	33	C	13.82	01					D+L+X	0.04	0.05					
BH08	13.82	33	C	13.82	02					A+P	0.51	0.63					
BH08	15.15	34	C	15.15	01	4.2	2510	2410					41.6				
BH08	16.75	35	C	16.75	01					A+P+X	0.43	0.56					
BH08	16.75	35	C	16.75	02					A+P	0.68	0.80					
BH08	17.60	36	C	17.60	01					D+L	0.16	0.22					
BH08	17.60	36	C	17.60	02					A+P+X	0.78	1.04					
BH08	18.40	37	C	18.40	01	3.9	2530	2440					39.2				
BH08	19.90	39	C	19.90	01					D	0.99	1.36					
BH08	19.90	39	C	19.90	02					A+X	0.63	0.82					
BH08	22.40	39	C	22.40	01					D+L+X	0.39	0.54					
BH08	22.40	39	C	22.40	02					A+P	1.24	1.59					
BH08	23.10	40	C	23.10	01					I	0.47	0.58					
BH08	23.10	40	C	23.10	02					I	0.82	0.90					

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Project No.	LT1983		
Engineer	Structural Soils Ltd		
Employer	Structural Soils Ltd		

Hole ID	Sample depth m	Sample no.	Sample type	Specimen depth m	Specimen no.	Water Content	Bulk Density	Dry Density	Particle density	Point load			UCS	Brazil	Porosity	Elastic Modulus	Posissons Ratio
										Type	Is	Is50					
						%	kg/m³	kg/m³	Mg/m³		MN/m²	MN/m²	MN/m²	MN/m²	%	GPa	
BH08	24.05	41	C	24.05	01					A	1.13	1.43					
BH08	24.05	41	C	24.05	02					D	1.03	1.42					
BH08	26.65	42	C	26.65	01					D	1.13	1.57					
BH08	26.65	42	C	26.65	02					A	1.33	1.67					
BH08	27.60	43	C	27.60	01					D	0.79	1.10					
BH08	27.60	43	C	27.60	02					A	1.10	1.55					
BH09	10.85	38	C	10.85	01					I+P+X	0.14	0.13					
BH09	10.85	38	C	10.85	02					I+P+X	0.03	0.03					
BH09	12.35	39	C	12.35	01					A+P+X	0.03	0.03					
BH09	12.35	39	C	12.35	02					A+P	0.26	0.33					
BH09	13.50	40	C	13.50	01	2.6	2580	2510					22.1				
BH09	14.40	41	C	14.40	01					D+L	0.23	0.32					
BH09	14.40	41	C	14.40	02					A+P	1.24	1.54					
BH09	16.35	42	C	16.35	01	2.8	2560	2490					23				
BH09	16.80	43	C	16.80	01					D+L+X	0.01	0.01					
BH09	16.80	43	C	16.80	02					A+P+X	0.41	0.55					
BH09	17.50	44	C	17.50	01					D+L	0.26	0.36					
BH09	17.50	44	C	17.50	02					A+P	1.06	1.41					
BH09	19.50	45	C	19.50	01					I+L	0.22	0.29					
BH09	19.50	45	C	19.50	02					I+P	0.59	0.66					
BH09	21.60	46	C	21.60	01					D	0.93	1.26					
BH09	21.60	46	C	21.60	02					A	0.85	1.08					

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Project No.	LT1983		
Engineer	Structural Soils Ltd		
Employer	Structural Soils Ltd		

Hole ID	Sample depth m	Sample no.	Sample type	Specimen depth m	Specimen no.	Water Content	Bulk Density	Dry Density	Particle density	Point load			UCS	Brazil	Porosity	Elastic Modulus	Posissons Ratio
										Type	Is	Is50					
						%	kg/m³	kg/m³	Mg/m³		MN/m²	MN/m²	MN/m²	MN/m²	%	GPa	
BH10	10.90	37	C	10.90	01					A+P+X	0.13	0.18					
BH10	10.90	37	C	10.90	02					I+P	0.13	0.15					
BH10	12.45	38	C	12.45	01					A+P+X	0.02	0.03					
BH10	12.45	38	C	12.45	02					A+P+X	0.06	0.08					
BH10	14.75	39	C	14.75	01					A+P+X	0.04	0.05					
BH10	14.75	39	C	14.75	02					A+P+X	0.02	0.02					
BH10	15.80	40	C	15.80	01	3.6	2530	2440					34				
BH10	16.85	41	C	16.85	01					A+P+X	0.27	0.36					
BH10	16.85	41	C	16.85	02					A+P+X	0.83	1.07					
BH10	18.00	42	C	18.00	01					I+P	0.25	0.27					
BH10	18.00	42	C	18.00	02					I+P	0.80	0.96					
BH10	19.50	43	C	19.50	01					D+L	0.29	0.41					
BH10	19.50	43	C	19.50	02					A+P	1.21	1.56					
BH10	21.55	44	C	21.55	01					D+L	0.44	0.61					
BH10	21.55	44	C	21.55	02					A+P	0.87	1.09					
BH10	24.70	46	C	24.70	01					D+L+X	0.18	0.25					
BH10	24.70	46	C	24.70	02					A+P	1.07	1.44					
BH11	14.28	41	C	14.28	01					A+P+X	0.39	0.48					
BH11	14.28	41	C	14.28	02					A+P	0.36	0.46					
BH11	15.00	43	C	15.00	01	3.3	2520	2440					38.8				
BH11	15.31	44	C	15.31	01					D+L	0.47	0.66					
BH11	15.31	44	C	15.31	02					A+P+X	1.65	2.06					

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Project No.	LT1983		
Engineer	Structural Soils Ltd		
Employer	Structural Soils Ltd		

Hole ID	Sample depth m	Sample no.	Sample type	Specimen depth m	Specimen no.	Water Content	Bulk Density	Dry Density	Particle density	Point load			UCS	Brazil	Porosity	Elastic Modulus	Posissons Ratio
										Type	Is	Is50					
						%	kg/m³	kg/m³	Mg/m³		MN/m²	MN/m²	MN/m²	MN/m²	%	GPa	
BH11	15.62	45	C	15.62	01					D+X	0.31	0.44					
BH11	15.62	45	C	15.62	02					A	1.02	1.36					
BH11	17.14	46	C	17.14	01	6.1	2430	2290					36.2				
BH11	17.72	42	C	17.72	01					D+L	0.42	0.58					
BH11	17.72	42	C	17.72	02					A+P	1.06	1.43					
BH11	18.60	47	C	18.60	01					D+L	1.03	1.42					
BH11	18.60	47	C	18.60	02					A+P	1.37	1.77					
BH11	19.68	48	C	19.68	01					D+L	0.66	0.91					
BH11	19.68	48	C	19.68	02					A+P	0.94	1.23					
BH11	21.48	50	C	21.48	01					D+L	0.17	0.23					
BH11	21.48	50	C	21.48	02					A+P	1.07	1.38					
BH11	24.36	52	C	24.36	01					D+L	0.16	0.23					
BH11	24.36	52	C	24.36	02					A+P+X	0.80	1.07					
BH11	27.43	54	C	27.43	01					D+L	0.65	0.90					
BH11	27.43	54	C	27.43	02					A+P+X	0.55	0.77					
BH12	3.70	6	C	3.70	01					A+P+X	0.82	1.10					
BH12	3.70	6	C	3.70	02					A+P	1.00	1.27					
BH12	5.10	7	C	5.10	01					D+L	0.12	0.16					
BH12	5.10	7	C	5.10	02					A+P+X	0.78	0.96					
BH12	5.65	8	C	5.65	01					A+P+X	0.70	0.88					
BH12	5.65	8	C	5.65	02					A+P+X	0.32	0.41					
BH12	6.90	9	C	6.90	01					I+P+X	0.19	0.24					

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Project No.	LT1983		
Engineer	Structural Soils Ltd		
Employer	Structural Soils Ltd		

Hole ID	Sample depth m	Sample no.	Sample type	Specimen depth m	Specimen no.	Water Content	Bulk Density	Dry Density	Particle density	Point load			UCS	Brazil	Porosity	Elastic Modulus	Posissons Ratio
										Type	Is	Is50					
						%	kg/m³	kg/m³	Mg/m³		MN/m²	MN/m²	MN/m²	MN/m²	%	GPa	
BH12	6.90	9	C	6.90	02					I+P	0.88	0.89					
BH12	8.30	10	C	8.30	01					D+L	0.29	0.40					
BH12	8.30	10	C	8.30	02					A+P+X	0.90	1.16					
BH12	9.70	11	C	9.70	01					D+L+X	0.30	0.42					
BH12	9.70	11	C	9.70	02					A+P+X	0.71	0.93					
BH13	3.45	8	C	3.45	01					D+L	0.75	1.05					
BH13	3.45	8	C	3.45	02					A+P	1.00	1.35					
BH13	4.25	9	C	4.25	01					D+L+X	0.19	0.26					
BH13	4.25	9	C	4.25	02					A+P	0.99	1.26					
BH13	4.70	10	C	4.70	01					D+L	0.00	0.00					
BH13	4.70	10	C	4.70	02					A+P	1.31	1.70					
BH13	6.12	11	C	6.12	01					A+P+X	1.33	1.72					
BH13	6.12	11	C	6.12	02					A+P	1.29	1.60					
BH13	8.00	12	C	8.00	01					D+L	0.54	0.75					
BH13	8.00	12	C	8.00	02					A+P	0.88	1.14					
BH13	9.50	14	C	9.50	01					D+L	0.53	0.73					
BH13	9.50	14	C	9.50	02					A+P	1.10	1.42					
BH14	4.05	7	C	4.05	01					A	0.04	0.04					
BH14	4.05	7	C	4.05	02					A	0.00	0.01					
BH14	4.73	8	C	4.73	01					A+P	0.91	1.08					
BH14	4.73	8	C	4.73	02					I+P	0.66	0.68					
BH14	5.20	9	C	5.20	01					D+L	0.01	0.01					

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Project No.	LT1983		
Engineer	Structural Soils Ltd		
Employer	Structural Soils Ltd		

Hole ID	Sample depth m	Sample no.	Sample type	Specimen depth m	Specimen no.	Water Content	Bulk Density	Dry Density	Particle density	Point load			UCS	Brazil	Porosity	Elastic Modulus	Posissons Ratio
										Type	Is	Is50					
						%	kg/m³	kg/m³	Mg/m³		MN/m²	MN/m²	MN/m²	MN/m²	%	GPa	
BH14	5.20	9	C	5.20	02					A+P	1.29	1.67					
BH14	8.40	10	C	8.40	01					D+L+X	0.03	0.05					
BH14	8.40	10	C	8.40	02					A+P+X	0.19	0.24					
BH14	9.70	11	C	9.70	01					D	0.91	1.25					
BH14	9.70	11	C	9.70	02					A	1.09	1.44					
BH15	9.20	15	C	9.20	01	4.8	2500	2380					17.1				
BH15	10.10	16	C	10.10	01					D	1.23	1.64					
BH15	10.10	16	C	10.10	02					A	1.18	1.55					
BH15	12.70	18	C	12.70	01					D	0.85	1.16					
BH15	12.70	18	C	12.70	02					A	1.11	1.41					
BH15	13.60	19	C	13.60	01					D+L+X	0.19	0.19					
BH15	13.60	19	C	13.60	02					A+P	0.31	0.30					
BH15	14.80	20	C	14.80	01					D+L	0.14	0.19					
BH15	14.80	20	C	14.80	02					A+P	0.29	0.34					
BH15	17.25	22	C	17.25	01					D+L	0.19	0.26					
BH15	17.25	22	C	17.25	02					A+P	0.64	0.78					
BH16	7.00	11	C	7.00	01					A+P+X	0.07	0.08					
BH16	7.00	11	C	7.00	02					A+P+X	0.01	0.02					
BH16	8.65	12	C	8.65	01					D+L	0.00	0.00					
BH16	8.65	12	C	8.65	02					A+P+X	0.06	0.07					
BH16	9.75	13	C	9.75	01	5.6	2420	2290					20				
BH16	11.45	14	C	11.45	01					D	0.66	0.90					

Approved by:	Leeds Laboratory	Results apply to samples as received.	
Steve Harper		Print date 31/10/2024	SOIL engineering
	Revision No. 2.04	Issue Date 01/05/2024	

Project Name	A635 Barnsley Bus Rapid Transit Route	**Summary Of Laboratory Rock Strength Tests**	
Project No.	LT1983		
Engineer	Structural Soils Ltd		
Employer	Structural Soils Ltd		

Hole ID	Sample depth m	Sample no.	Sample type	Specimen depth m	Specimen no.	Water Content	Bulk Density	Dry Density	Particle density	Point load			UCS	Brazil	Porosity	Elastic Modulus	Posissons Ratio
										Type	Is	Is50					
						%	kg/m³	kg/m³	Mg/m³		MN/m²	MN/m²	MN/m²	MN/m²	%	GPa	
BH16	11.45	14	C	11.45	02					A	1.00	1.28					
BH16	12.40	15	C	12.40	01					D+L	0.45	0.61					
BH16	12.40	15	C	12.40	02					A+P	1.37	1.72					
BH16	14.40	16	C	14.40	01					I+P+X	0.08	0.09					
BH16	14.40	16	C	14.40	02					I+L	0.20	0.22					
BH16	16.30	17	C	16.30	01					D	0.90	1.21					
BH16	16.30	17	C	16.30	02					A	1.48	1.83					

Approved by:	Leeds Laboratory	Results apply to samples as received.	
Steve Harper		Print date 31/10/2024	SOIL engineering
	Revision No. 2.04	Issue Date 01/05/2024	

Project Name	A635 Barnsley Bus Rapid Transit Route	**Point Load Index Result**	
Project No.	LT1983		
Engineer	Structural Soils Ltd		
Client	Structural Soils Ltd	Test method: ISRM 1985 : Suggested Method	

Hole ID	Sample depth m	Sample type	Sample no.	Specimen depth m	Specimen ref.	Description	Test Result								
							Type	W mm	D mm	D' mm	P kN	De mm	Is MN/m2	F	Is(50) MN/m2
BH01	10.05	C	14	10.05	1	Thinly laminated dark grey MUDSTONE.	D+L	100.51	99.38	94.51	3.04	96.91	0.32	1.35	0.44
BH01	10.05	C	14	10.05	2	Thinly laminated dark grey MUDSTONE.	A+P	100.59	84.29	73.38	4.15	96.94	0.44	1.35	0.59

Key

Point Load Type	D	Diametral		A	Axial
(Combination of)	I	Irregular lump		B	Block
	L	Parallel to planes of weakness		P	Perpendicular to planes of weakness
	X	Invalid failure of point load (not broken between points of load application)			
Dimensions	L	Distance between contact points and nearest free end (not applicable to axial tests)			
	W	Diameter of core or average smallest width perpendicular to axis of loading in a block or irregular lump			
	D	Distance between platens when just in contact with specimen			
	D'	Distance between platens at point of failure			
	De	Equivalent core diameter		Is	P/De2
	Is(50)	F x Is		F	(De/50)0.45
	Is(50)	point load strength index corrected for a diametral test of core diameter 50mm			
	For Axial/Lump tests De2 = (4/Pi) x (W x D')			For Diametral tests De2 = D x D'	

Approved by:		Results apply to samples as received.	
Steve Harper		Print date 31/10/2024	SOIL ENGINEERING
	Revision No. 3.00	Issue Date 07/12/2023	

Project Name	A635 Barnsley Bus Rapid Transit Route	**Point Load Index Result**	
Project No.	LT1983		
Engineer	Structural Soils Ltd		
Client	Structural Soils Ltd	Test method: ISRM 1985 : Suggested Method	

Hole ID	Sample depth m	Sample type	Sample no.	Specimen depth m	Specimen ref.	Description	Test Result								
							Type	W mm	D mm	D' mm	P kN	De mm	Is MN/m2	F	Is(50) MN/m2
BH01	12.55	C	16	12.55	1	Thinly laminated grey SANDSTONE.	D+L	53.86	53.06	50.22	4.01	51.62	1.5	1.01	1.53
BH01	12.55	C	16	12.55	2	Thinly laminated grey SANDSTONE.	A+P	53.88	37.52	35.08	3.23	49.06	1.34	0.99	1.33

Key

Point Load Type (Combination of)	D	Diametral		A	Axial
	I	Irregular lump		B	Block
	L	Parallel to planes of weakness		P	Perpendicular to planes of weakness
	X	Invalid failure of point load (not broken between points of load application)			
Dimensions	L	Distance between contact points and nearest free end (not applicable to axial tests)			
	W	Diameter of core or average smallest width perpendicular to axis of loading in a block or irregular lump			
	D	Distance between platens when just in contact with specimen			
	D'	Distance between platens at point of failure			
	De	Equivalent core diameter		Is	P/De2
	Is(50)	F x Is		F	(De/50)0.45
	Is(50)	point load strength index corrected for a diametral test of core diameter 50mm			
	For Axial/Lump tests De2 = (4/Pi) x (W x D')			For Diametral tests De2 = D x D'	

Approved by:		Results apply to samples as received.	
Steve Harper		Print date 31/10/2024	SOIL ENGINEERING
	Revision No. 3.00	Issue Date 07/12/2023	

Project Name	A635 Barnsley Bus Rapid Transit Route	**Point Load Index Result**	
Project No.	LT1983		
Engineer	Structural Soils Ltd		
Client	Structural Soils Ltd	Test method: ISRM 1985 : Suggested Method	

Hole ID	Sample depth m	Sample type	Sample no.	Specimen depth m	Specimen ref.	Description	Test Result								
							Type	W mm	D mm	D' mm	P kN	De mm	Is MN/m2	F	Is(50) MN/m2
BH01	15.40	C	18	15.40	1	Thinly laminated grey SANDSTONE.	D+L	101.22	100.82	94.48	6.51	97.60	0.68	1.35	0.92
BH01	15.40	C	18	15.40	2	Thinly laminated grey SANDSTONE.	A+P	101.16	57.15	48.64	8.6	79.15	1.37	1.23	1.69

Key

Point Load Type	D	Diametral		A	Axial
(Combination of)	I	Irregular lump		B	Block
	L	Parallel to planes of weakness		P	Perpendicular to planes of weakness
	X	Invalid failure of point load (not broken between points of load application)			
Dimensions	L	Distance between contact points and nearest free end (not applicable to axial tests)			
	W	Diameter of core or average smallest width perpendicular to axis of loading in a block or irregular lump			
	D	Distance between platens when just in contact with specimen			
	D'	Distance between platens at point of failure			
	De	Equivalent core diameter		Is	P/De2
	Is(50)	F x Is		F	(De/50)0.45
	Is(50)	point load strength index corrected for a diametral test of core diameter 50mm			
	For Axial/Lump tests De2 = (4/Pi) x (W x D')			For Diametral tests De2 = D x D'	

Approved by:		Results apply to samples as received.	
Steve Harper		Print date 31/10/2024	SOIL ENGINEERING
	Revision No. 3.00	Issue Date 07/12/2023	

Project Name	A635 Barnsley Bus Rapid Transit Route	**Point Load Index Result**	
Project No.	LT1983		
Engineer	Structural Soils Ltd		
Client	Structural Soils Ltd	Test method: ISRM 1985 : Suggested Method	

Hole ID	Sample depth m	Sample type	Sample no.	Specimen depth m	Specimen ref.	Description	Test Result								
							Type	W mm	D mm	D' mm	P kN	De mm	Is MN/m2	F	Is(50) MN/m2
BH01	3.80	C	8	3.80	1	Fractured thinly laminated brownish grey MUDSTONE. Tested outside calibrated range of device	A+P+X	102.16	63.98	60.91	0.05	89.01	0.01	1.3	0.01
BH01	3.80	C	8	3.80	2	Fractured thinly laminated brownish grey MUDSTONE. Tested outside calibrated range of device	A+P	100.79	81.45	75.63	0.11	98.52	0.01	1.36	0.02

Key

Point Load Type (Combination of)	D	Diametral		A	Axial
	I	Irregular lump		B	Block
	L	Parallel to planes of weakness		P	Perpendicular to planes of weakness
	X	Invalid failure of point load (not broken between points of load application)			
Dimensions	L	Distance between contact points and nearest free end (not applicable to axial tests)			
	W	Diameter of core or average smallest width perpendicular to axis of loading in a block or irregular lump			
	D	Distance between platens when just in contact with specimen			
	D'	Distance between platens at point of failure			
	De	Equivalent core diameter		Is	P/De2
	Is(50)	F x Is		F	(De/50)0.45
	Is(50)	point load strength index corrected for a diametral test of core diameter 50mm			
	For Axial/Lump tests De2 = (4/Pi) x (W x D')			For Diametral tests De2 = D x D'	

Approved by:		Results apply to samples as received.	
Steve Harper		Print date 31/10/2024	SOIL engineering
	Revision No. 3.00	Issue Date 07/12/2023	

Project Name	A635 Barnsley Bus Rapid Transit Route	**Point Load Index Result**	
Project No.	LT1983		
Engineer	Structural Soils Ltd		
Client	Structural Soils Ltd	Test method: ISRM 1985 : Suggested Method	

Hole ID	Sample depth m	Sample type	Sample no.	Specimen depth m	Specimen ref.	Description	Test Result								
							Type	W mm	D mm	D' mm	P kN	De mm	Is MN/m2	F	Is(50) MN/m2
BH01	4.90	C	9	4.90	1	Thinly laminated dark grey MUDSTONE. Tested outside calibrated range of device	D+L	101.36	101.3	100.29	0	100.79	0	1.37	0
BH01	4.90	C	9	4.90	2	Thinly laminated dark grey MUDSTONE. Tested outside calibrated range of device	A+P	101.61	72.75	69.03	0.1	94.50	0.01	1.33	0.01

Key

Point Load Type (Combination of)	D	Diametral		A	Axial
	I	Irregular lump		B	Block
	L	Parallel to planes of weakness		P	Perpendicular to planes of weakness
	X	Invalid failure of point load (not broken between points of load application)			
Dimensions	L	Distance between contact points and nearest free end (not applicable to axial tests)			
	W	Diameter of core or average smallest width perpendicular to axis of loading in a block or irregular lump			
	D	Distance between platens when just in contact with specimen			
	D'	Distance between platens at point of failure			
	De	Equivalent core diameter		Is	P/De2
	Is(50)	F x Is		F	(De/50)0.45
	Is(50)	point load strength index corrected for a diametral test of core diameter 50mm			
	For Axial/Lump tests De2 = (4/Pi) x (W x D')			For Diametral tests De2 = D x D'	

Approved by:		Results apply to samples as received.	
Steve Harper		Print date 31/10/2024	SOIL ENGINEERING
	Revision No. 3.00	Issue Date 07/12/2023	

Project Name	A635 Barnsley Bus Rapid Transit Route	**Point Load Index Result**	
Project No.	LT1983		
Engineer	Structural Soils Ltd		
Client	Structural Soils Ltd	Test method: ISRM 1985 : Suggested Method	

Hole ID	Sample depth m	Sample type	Sample no.	Specimen depth m	Specimen ref.	Description	Test Result								
							Type	W mm	D mm	D' mm	P kN	De mm	Is MN/m2	F	Is(50) MN/m2
BH01	6.30	C	10	6.30	1	Thinly laminated dark grey MUDSTONE. Tested outside calibrated range of device	A+P+X	100.93	76.36	71.53	0.27	95.88	0.03	1.34	0.04
BH01	6.30	C	10	6.30	2	Thinly laminated dark grey MUDSTONE. Tested outside calibrated range of device	A+P	100.93	69.24	65.05	0.36	91.43	0.04	1.31	0.06

Key

Point Load Type (Combination of)	D	Diametral		A	Axial
	I	Irregular lump		B	Block
	L	Parallel to planes of weakness		P	Perpendicular to planes of weakness
	X	Invalid failure of point load (not broken between points of load application)			
Dimensions	L	Distance between contact points and nearest free end (not applicable to axial tests)			
	W	Diameter of core or average smallest width perpendicular to axis of loading in a block or irregular lump			
	D	Distance between platens when just in contact with specimen			
	D'	Distance between platens at point of failure			
	De	Equivalent core diameter		Is	P/De2
	Is(50)	F x Is		F	(De/50)0.45
	Is(50)	point load strength index corrected for a diametral test of core diameter 50mm			
	For Axial/Lump tests De2 = (4/Pi) x (W x D')			For Diametral tests De2 = D x D'	

Approved by:		Results apply to samples as received.	
Steve Harper		Print date 31/10/2024	SOIL ENGINEERING
	Revision No. 3.00	Issue Date 07/12/2023	

Project Name	A635 Barnsley Bus Rapid Transit Route	**Point Load Index Result**	
Project No.	LT1983		
Engineer	Structural Soils Ltd		
Client	Structural Soils Ltd	Test method: ISRM 1985 : Suggested Method	

Hole ID	Sample depth m	Sample type	Sample no.	Specimen depth m	Specimen ref.	Description	Test Result								
							Type	W mm	D mm	D' mm	P kN	De mm	Is MN/m2	F	Is(50) MN/m2
BH01	7.50	C	11	7.50	1	Thinly laminated dark grey MUDSTONE.	A+P+X	100.57	57.41	48.05	1.67	78.44	0.27	1.22	0.33
BH01	7.50	C	11	7.50	2	Thinly laminated dark grey MUDSTONE.	A+P+X	100.83	72.72	56.84	2.78	85.42	0.38	1.27	0.48

Key

Point Load Type (Combination of)	D	Diametral		A	Axial
	I	Irregular lump		B	Block
	L	Parallel to planes of weakness		P	Perpendicular to planes of weakness
	X	Invalid failure of point load (not broken between points of load application)			
Dimensions	L	Distance between contact points and nearest free end (not applicable to axial tests)			
	W	Diameter of core or average smallest width perpendicular to axis of loading in a block or irregular lump			
	D	Distance between platens when just in contact with specimen			
	D'	Distance between platens at point of failure			
	De	Equivalent core diameter		Is	P/De2
	Is(50)	F x Is		F	(De/50)0.45
	Is(50)	point load strength index corrected for a diametral test of core diameter 50mm			
	For Axial/Lump tests De2 = (4/Pi) x (W x D')			For Diametral tests De2 = D x D'	

Approved by:		Results apply to samples as received.	
Steve Harper		Print date 31/10/2024	SOIL ENGINEERING
	Revision No. 3.00	Issue Date 07/12/2023	

Project Name	A635 Barnsley Bus Rapid Transit Route	**Point Load Index Result**	
Project No.	LT1983		
Engineer	Structural Soils Ltd		
Client	Structural Soils Ltd	Test method: ISRM 1985 : Suggested Method	

Hole ID	Sample depth m	Sample type	Sample no.	Specimen depth m	Specimen ref.	Description	Test Result								
							Type	W mm	D mm	D' mm	P kN	De mm	Is MN/m2	F	Is(50) MN/m2
BH01	9.85	C	13	9.85	1	Thinly laminated grey MUDSTONE.	A+P	101.08	78.4	63.23	4.85	90.21	0.6	1.3	0.78
BH01	9.85	C	13	9.85	2	Thinly laminated grey MUDSTONE. Tested outside calibrated range of device	I+L+X	66.82	61.09	59.54	0.17	71.17	0.03	1.17	0.04

Key

Point Load Type (Combination of)	D	Diametral		A	Axial
	I	Irregular lump		B	Block
	L	Parallel to planes of weakness		P	Perpendicular to planes of weakness
	X	Invalid failure of point load (not broken between points of load application)			
Dimensions	L	Distance between contact points and nearest free end (not applicable to axial tests)			
	W	Diameter of core or average smallest width perpendicular to axis of loading in a block or irregular lump			
	D	Distance between platens when just in contact with specimen			
	D'	Distance between platens at point of failure			
	De	Equivalent core diameter		Is	P/De2
	Is(50)	F x Is		F	(De/50)0.45
	Is(50)	point load strength index corrected for a diametral test of core diameter 50mm			
	For Axial/Lump tests De2 = (4/Pi) x (W x D')			For Diametral tests De2 = D x D'	

Approved by:		Results apply to samples as received.	
Steve Harper		Print date 31/10/2024	SOIL ENGINEERING
	Revision No. 3.00	Issue Date 07/12/2023	

Project Name	A635 Barnsley Bus Rapid Transit Route	**Point Load Index Result**	
Project No.	LT1983		
Engineer	Structural Soils Ltd		
Client	Structural Soils Ltd	Test method: ISRM 1985 : Suggested Method	

Hole ID	Sample depth m	Sample type	Sample no.	Specimen depth m	Specimen ref.	Description	Test Result								
							Type	W mm	D mm	D' mm	P kN	De mm	Is MN/m2	F	Is(50) MN/m2
BH02	12.70	C	19	12.70	1	Thinly laminated grey SILTSTONE.	A+P	100.86	72.92	67.67	0.97	93.22	0.11	1.32	0.15
BH02	12.70	C	19	12.70	2	Thinly laminated grey SILTSTONE.	A+P	100.75	76.86	70.67	1.06	95.21	0.12	1.34	0.16

Key

Point Load Type	D	Diametral		A	Axial
(Combination of)	I	Irregular lump		B	Block
	L	Parallel to planes of weakness		P	Perpendicular to planes of weakness
	X	Invalid failure of point load (not broken between points of load application)			
Dimensions	L	Distance between contact points and nearest free end (not applicable to axial tests)			
	W	Diameter of core or average smallest width perpendicular to axis of loading in a block or irregular lump			
	D	Distance between platens when just in contact with specimen			
	D'	Distance between platens at point of failure			
	De	Equivalent core diameter		Is	P/De2
	Is(50)	F x Is		F	(De/50)0.45
	Is(50)	point load strength index corrected for a diametral test of core diameter 50mm			
	For Axial/Lump tests De2 = (4/Pi) x (W x D')			For Diametral tests De2 = D x D'	

Approved by:		Results apply to samples as received.	
Steve Harper		Print date 31/10/2024	SOIL ENGINEERING
	Revision No. 3.00	Issue Date 07/12/2023	

Project Name	A635 Barnsley Bus Rapid Transit Route	**Point Load Index Result**	
Project No.	LT1983		
Engineer	Structural Soils Ltd		
Client	Structural Soils Ltd	Test method: ISRM 1985 : Suggested Method	

Hole ID	Sample depth m	Sample type	Sample no.	Specimen depth m	Specimen ref.	Description	Test Result								
							Type	W mm	D mm	D' mm	P kN	De mm	Is MN/m2	F	Is(50) MN/m2
BH02	14.50	C	21	14.50	1	Thinly laminated grey SANDSTONE.	D+L	100.68	100.2	95.97	5.95	98.06	0.62	1.35	0.84
BH02	14.50	C	21	14.50	2	Thinly laminated grey SANDSTONE.	A+P	101.29	68.84	53.36	9.75	82.96	1.42	1.26	1.78

Key

Point Load Type (Combination of)	D	Diametral		A	Axial
	I	Irregular lump		B	Block
	L	Parallel to planes of weakness		P	Perpendicular to planes of weakness
	X	Invalid failure of point load (not broken between points of load application)			
Dimensions	L	Distance between contact points and nearest free end (not applicable to axial tests)			
	W	Diameter of core or average smallest width perpendicular to axis of loading in a block or irregular lump			
	D	Distance between platens when just in contact with specimen			
	D'	Distance between platens at point of failure			
	De	Equivalent core diameter		Is	P/De2
	Is(50)	F x Is		F	(De/50)0.45
	Is(50)	point load strength index corrected for a diametral test of core diameter 50mm			
	For Axial/Lump tests De2 = (4/Pi) x (W x D')			For Diametral tests De2 = D x D'	

Approved by:		Results apply to samples as received.	
Steve Harper		Print date 31/10/2024	SOIL ENGINEERING
	Revision No. 3.00	Issue Date 07/12/2023	

Project Name	A635 Barnsley Bus Rapid Transit Route	**Point Load Index Result**	
Project No.	LT1983		
Engineer	Structural Soils Ltd		
Client	Structural Soils Ltd	Test method: ISRM 1985 : Suggested Method	

Hole ID	Sample depth m	Sample type	Sample no.	Specimen depth m	Specimen ref.	Description	Test Result								
							Type	W mm	D mm	D' mm	P kN	De mm	Is MN/m2	F	Is(50) MN/m2
BH02	16.15	C	23	16.15	1	Thinly laminated grey MUDSTONE. Tested outside calibrated range of device	D+L	99.93	98.79	91.1	0	94.87	0	1.33	0
BH02	16.15	C	23	16.15	2	Thinly laminated grey MUDSTONE.	A+P+X	100.97	54.83	50.34	0.71	80.45	0.11	1.24	0.14

Key

Point Load Type (Combination of)	D	Diametral		A	Axial
	I	Irregular lump		B	Block
	L	Parallel to planes of weakness		P	Perpendicular to planes of weakness
	X	Invalid failure of point load (not broken between points of load application)			
Dimensions	L	Distance between contact points and nearest free end (not applicable to axial tests)			
	W	Diameter of core or average smallest width perpendicular to axis of loading in a block or irregular lump			
	D	Distance between platens when just in contact with specimen			
	D'	Distance between platens at point of failure			
	De	Equivalent core diameter		Is	P/De2
	Is(50)	F x Is		F	(De/50)0.45
	Is(50)	point load strength index corrected for a diametral test of core diameter 50mm			
	For Axial/Lump tests De2 = (4/Pi) x (W x D')			For Diametral tests De2 = D x D'	

Approved by:		Results apply to samples as received.	
Steve Harper		Print date 31/10/2024	SOIL ENGINEERING
	Revision No. 3.00	Issue Date 07/12/2023	

Project Name	A635 Barnsley Bus Rapid Transit Route	**Point Load Index Result**	
Project No.	LT1983		
Engineer	Structural Soils Ltd		
Client	Structural Soils Ltd	Test method: ISRM 1985 : Suggested Method	

Hole ID	Sample depth m	Sample type	Sample no.	Specimen depth m	Specimen ref.	Description	Test Result								
							Type	W mm	D mm	D' mm	P kN	De mm	Is MN/m2	F	Is(50) MN/m2
BH02	4.00	C	12	4.00	1	Thinly laminated greyish brown MUDSTONE. Tested outside calibrated range of device	D+L	101.27	101.06	96.84	0.04	98.93	0	1.36	0.01
BH02	4.00	C	12	4.00	2	Thinly laminated greyish brown MUDSTONE. Tested outside calibrated range of device	A+P+X	101.41	76.63	69.54	0.13	94.76	0.01	1.33	0.02

Key

Point Load Type (Combination of)	D	Diametral		A	Axial
	I	Irregular lump		B	Block
	L	Parallel to planes of weakness		P	Perpendicular to planes of weakness
	X	Invalid failure of point load (not broken between points of load application)			
Dimensions	L	Distance between contact points and nearest free end (not applicable to axial tests)			
	W	Diameter of core or average smallest width perpendicular to axis of loading in a block or irregular lump			
	D	Distance between platens when just in contact with specimen			
	D'	Distance between platens at point of failure			
	De	Equivalent core diameter		Is	P/De2
	Is(50)	F x Is		F	(De/50)0.45
	Is(50)	point load strength index corrected for a diametral test of core diameter 50mm			
	For Axial/Lump tests De2 = (4/Pi) x (W x D')			For Diametral tests De2 = D x D'	

Approved by:		Results apply to samples as received.	
Steve Harper		Print date 31/10/2024	SOIL ENGINEERING
	Revision No. 3.00	Issue Date 07/12/2023	

Project Name	A635 Barnsley Bus Rapid Transit Route	**Point Load Index Result**	
Project No.	LT1983		
Engineer	Structural Soils Ltd		
Client	Structural Soils Ltd	Test method: ISRM 1985 : Suggested Method	

Hole ID	Sample depth m	Sample type	Sample no.	Specimen depth m	Specimen ref.	Description	Test Result								
							Type	W mm	D mm	D' mm	P kN	De mm	Is MN/m2	F	Is(50) MN/m2
BH02	5.35	C	13	5.35	1	Fractured brownish grey MUDSTONE. Tested outside calibrated range of device	D	101.68	99.73	95.16	0	97.42	0	1.35	0
BH02	5.35	C	13	5.35	2	Fractured brownish grey MUDSTONE. Tested outside calibrated range of device	A	101.46	60.82	49.9	0.3	80.29	0.05	1.24	0.06

Key

Point Load Type (Combination of)	D	Diametral		A	Axial
	I	Irregular lump		B	Block
	L	Parallel to planes of weakness		P	Perpendicular to planes of weakness
	X	Invalid failure of point load (not broken between points of load application)			
Dimensions	L	Distance between contact points and nearest free end (not applicable to axial tests)			
	W	Diameter of core or average smallest width perpendicular to axis of loading in a block or irregular lump			
	D	Distance between platens when just in contact with specimen			
	D'	Distance between platens at point of failure			
	De	Equivalent core diameter		Is	P/De2
	Is(50)	F x Is		F	(De/50)0.45
	Is(50)	point load strength index corrected for a diametral test of core diameter 50mm			
	For Axial/Lump tests De2 = (4/Pi) x (W x D')			For Diametral tests De2 = D x D'	

Approved by:		Results apply to samples as received.	
Steve Harper		Print date 31/10/2024	SOIL ENGINEERING
	Revision No. 3.00	Issue Date 07/12/2023	

Project Name	A635 Barnsley Bus Rapid Transit Route	**Point Load Index Result**	
Project No.	LT1983		
Engineer	Structural Soils Ltd		
Client	Structural Soils Ltd	Test method: ISRM 1985 : Suggested Method	

Hole ID	Sample depth m	Sample type	Sample no.	Specimen depth m	Specimen ref.	Description	Test Result								
							Type	W mm	D mm	D' mm	P kN	De mm	Is MN/m2	F	Is(50) MN/m2
BH02	5.90	C	14	5.90	1	Thinly laminated grey MUDSTONE with brown staining. Tested outside calibrated range of device	D+L	103.55	100.18	91.54	0	95.76	0	1.34	0
BH02	5.90	C	14	5.90	2	Thinly laminated grey MUDSTONE with brown staining. Tested outside calibrated range of device	A+P+X	102.42	61.56	57.05	0.05	86.25	0.01	1.28	0.01

Key

Point Load Type (Combination of)	D	Diametral		A	Axial
	I	Irregular lump		B	Block
	L	Parallel to planes of weakness		P	Perpendicular to planes of weakness
	X	Invalid failure of point load (not broken between points of load application)			
Dimensions	L	Distance between contact points and nearest free end (not applicable to axial tests)			
	W	Diameter of core or average smallest width perpendicular to axis of loading in a block or irregular lump			
	D	Distance between platens when just in contact with specimen			
	D'	Distance between platens at point of failure			
	De	Equivalent core diameter		Is	P/De2
	Is(50)	F x Is		F	(De/50)0.45
	Is(50)	point load strength index corrected for a diametral test of core diameter 50mm			
	For Axial/Lump tests De2 = (4/Pi) x (W x D')			For Diametral tests De2 = D x D'	

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Project Name	A635 Barnsley Bus Rapid Transit Route	**Point Load Index Result**	
Project No.	LT1983		
Engineer	Structural Soils Ltd		
Client	Structural Soils Ltd	Test method: ISRM 1985 : Suggested Method	

Hole ID	Sample depth m	Sample type	Sample no.	Specimen depth m	Specimen ref.	Description	Test Result								
							Type	W mm	D mm	D' mm	P kN	De mm	Is MN/m2	F	Is(50) MN/m2
BH02	7.90	C	15	7.90	1	Thinly laminated grey SILTSTONE. Tested outside calibrated range of device	D+L	101.38	100	97.74	0.13	98.86	0.01	1.36	0.02
BH02	7.90	C	15	7.90	2	Thinly laminated grey SILTSTONE.	A+P+X	101.56	85.46	80.48	1.46	102.01	0.14	1.38	0.19

Key

Point Load Type (Combination of)	D	Diametral		A	Axial
	I	Irregular lump		B	Block
	L	Parallel to planes of weakness		P	Perpendicular to planes of weakness
	X	Invalid failure of point load (not broken between points of load application)			
Dimensions	L	Distance between contact points and nearest free end (not applicable to axial tests)			
	W	Diameter of core or average smallest width perpendicular to axis of loading in a block or irregular lump			
	D	Distance between platens when just in contact with specimen			
	D'	Distance between platens at point of failure			
	De	Equivalent core diameter		Is	P/De2
	Is(50)	F x Is		F	(De/50)0.45
	Is(50)	point load strength index corrected for a diametral test of core diameter 50mm			
	For Axial/Lump tests De2 = (4/Pi) x (W x D')			For Diametral tests De2 = D x D'	

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Project Name	A635 Barnsley Bus Rapid Transit Route	**Point Load Index Result**	
Project No.	LT1983		
Engineer	Structural Soils Ltd		
Client	Structural Soils Ltd	Test method: ISRM 1985 : Suggested Method	

Hole ID	Sample depth m	Sample type	Sample no.	Specimen depth m	Specimen ref.	Description	Test Result								
							Type	W mm	D mm	D' mm	P kN	De mm	Is MN/m2	F	Is(50) MN/m2
BH02	9.45	C	17	9.45	1	Thinly laminated grey SILTSTONE. Tested outside calibrated range of device	D+L	100.8	99.32	96.4	0.17	97.85	0.02	1.35	0.02
BH02	9.45	C	17	9.45	2	Thinly laminated grey SILTSTONE.	A+P+X	100.7	68.35	49.15	1.41	79.38	0.22	1.23	0.28

Key

Point Load Type (Combination of)	D	Diametral		A	Axial
	I	Irregular lump		B	Block
	L	Parallel to planes of weakness		P	Perpendicular to planes of weakness
	X	Invalid failure of point load (not broken between points of load application)			
Dimensions	L	Distance between contact points and nearest free end (not applicable to axial tests)			
	W	Diameter of core or average smallest width perpendicular to axis of loading in a block or irregular lump			
	D	Distance between platens when just in contact with specimen			
	D'	Distance between platens at point of failure			
	De	Equivalent core diameter		Is	P/De2
	Is(50)	F x Is		F	(De/50)0.45
	Is(50)	point load strength index corrected for a diametral test of core diameter 50mm			
	For Axial/Lump tests De2 = (4/Pi) x (W x D')			For Diametral tests De2 = D x D'	

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Project Name	A635 Barnsley Bus Rapid Transit Route	**Point Load Index Result**	
Project No.	LT1983		
Engineer	Structural Soils Ltd		
Client	Structural Soils Ltd	Test method: ISRM 1985 : Suggested Method	

Hole ID	Sample depth m	Sample type	Sample no.	Specimen depth m	Specimen ref.	Description	Test Result								
							Type	W mm	D mm	D' mm	P kN	De mm	Is MN/m2	F	Is(50) MN/m2
BH03	3.40	C	5	3.40	1	Thinly laminated greyish brown fine SANDSTONE. Tested outside calibrated range of device	A+P	101.05	45.37	41.97	0.1	73.48	0.02	1.19	0.02
BH03	3.40	C	5	3.40	2	Thinly laminated greyish brown fine SANDSTONE. Tested outside calibrated range of device	A+P+X	101.22	49.42	46.19	0.05	77.15	0.01	1.22	0.01

Key

Point Load Type (Combination of)	D	Diametral		A	Axial
	I	Irregular lump		B	Block
	L	Parallel to planes of weakness		P	Perpendicular to planes of weakness
	X	Invalid failure of point load (not broken between points of load application)			
Dimensions	L	Distance between contact points and nearest free end (not applicable to axial tests)			
	W	Diameter of core or average smallest width perpendicular to axis of loading in a block or irregular lump			
	D	Distance between platens when just in contact with specimen			
	D'	Distance between platens at point of failure			
	De	Equivalent core diameter		Is	P/De2
	Is(50)	F x Is		F	(De/50)0.45
	Is(50)	point load strength index corrected for a diametral test of core diameter 50mm			
	For Axial/Lump tests De2 = (4/Pi) x (W x D')			For Diametral tests De2 = D x D'	

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Project Name	A635 Barnsley Bus Rapid Transit Route	**Point Load Index Result**	
Project No.	LT1983		
Engineer	Structural Soils Ltd		
Client	Structural Soils Ltd	Test method: ISRM 1985 : Suggested Method	

Hole ID	Sample depth m	Sample type	Sample no.	Specimen depth m	Specimen ref.	Description	Test Result								
							Type	W mm	D mm	D' mm	P kN	De mm	Is MN/m2	F	Is(50) MN/m2
BH03	4.55	C	6	4.55	1	Thinly laminated brownish grey MUDSTONE. Tested outside calibrated range of device	D+L	101.68	99.05	97.12	0	98.08	0	1.35	0
BH03	4.55	C	6	4.55	2	Thinly laminated brownish grey MUDSTONE. Tested outside calibrated range of device	A+P+X	100.03	76.84	70.74	0.17	94.92	0.02	1.33	0.03

Key

Point Load Type (Combination of)	D	Diametral		A	Axial
	I	Irregular lump		B	Block
	L	Parallel to planes of weakness		P	Perpendicular to planes of weakness
	X	Invalid failure of point load (not broken between points of load application)			
Dimensions	L	Distance between contact points and nearest free end (not applicable to axial tests)			
	W	Diameter of core or average smallest width perpendicular to axis of loading in a block or irregular lump			
	D	Distance between platens when just in contact with specimen			
	D'	Distance between platens at point of failure			
	De	Equivalent core diameter		Is	P/De2
	Is(50)	F x Is		F	(De/50)0.45
	Is(50)	point load strength index corrected for a diametral test of core diameter 50mm			
	For Axial/Lump tests De2 = (4/Pi) x (W x D')			For Diametral tests De2 = D x D'	

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Project Name	A635 Barnsley Bus Rapid Transit Route	**Point Load Index Result**	
Project No.	LT1983		
Engineer	Structural Soils Ltd		
Client	Structural Soils Ltd	Test method: ISRM 1985 : Suggested Method	

Hole ID	Sample depth m	Sample type	Sample no.	Specimen depth m	Specimen ref.	Description	Test Result								
							Type	W mm	D mm	D' mm	P kN	De mm	Is MN/m2	F	Is(50) MN/m2
BH03	5.95	C	7	5.95	1	Thinly laminated greyish brown fine SANDSTONE. Tested outside calibrated range of device	A+P+X	101.94	33.62	29.37	0.13	61.74	0.03	1.1	0.04
BH03	5.95	C	7	5.95	2	Thinly laminated greyish brown fine SANDSTONE.	A+P+X	101.31	35.83	31.05	0.64	63.29	0.16	1.11	0.18

Key

Point Load Type (Combination of)	D	Diametral		A	Axial
	I	Irregular lump		B	Block
	L	Parallel to planes of weakness		P	Perpendicular to planes of weakness
	X	Invalid failure of point load (not broken between points of load application)			
Dimensions	L	Distance between contact points and nearest free end (not applicable to axial tests)			
	W	Diameter of core or average smallest width perpendicular to axis of loading in a block or irregular lump			
	D	Distance between platens when just in contact with specimen			
	D'	Distance between platens at point of failure			
	De	Equivalent core diameter		Is	P/De2
	Is(50)	F x Is		F	(De/50)0.45
	Is(50)	point load strength index corrected for a diametral test of core diameter 50mm			
	For Axial/Lump tests De2 = (4/Pi) x (W x D')			For Diametral tests De2 = D x D'	

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Project Name	A635 Barnsley Bus Rapid Transit Route	**Point Load Index Result**	
Project No.	LT1983		
Engineer	Structural Soils Ltd		
Client	Structural Soils Ltd	Test method: ISRM 1985 : Suggested Method	

Hole ID	Sample depth m	Sample type	Sample no.	Specimen depth m	Specimen ref.	Description	Test Result								
							Type	W mm	D mm	D' mm	P kN	De mm	Is MN/m2	F	Is(50) MN/m2
BH03	8.00	C	8	8.00	1	Thinly laminated brownish grey MUDSTONE.	A+P+X	101.71	79.4	74.72	0.086	98.37	0.01	1.36	0.01
BH03	8.00	C	8	8.00	2	Thinly laminated brownish grey MUDSTONE. Tested outside calibrated range of device	A+P+X	101.55	74.22	65.81	0.16	92.24	0.02	1.32	0.02

Key

Point Load Type (Combination of)	D	Diametral		A	Axial
	I	Irregular lump		B	Block
	L	Parallel to planes of weakness		P	Perpendicular to planes of weakness
	X	Invalid failure of point load (not broken between points of load application)			
Dimensions	L	Distance between contact points and nearest free end (not applicable to axial tests)			
	W	Diameter of core or average smallest width perpendicular to axis of loading in a block or irregular lump			
	D	Distance between platens when just in contact with specimen			
	D'	Distance between platens at point of failure			
	De	Equivalent core diameter		Is	P/De2
	Is(50)	F x Is		F	(De/50)0.45
	Is(50)	point load strength index corrected for a diametral test of core diameter 50mm			
	For Axial/Lump tests De2 = (4/Pi) x (W x D')			For Diametral tests De2 = D x D'	

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Project Name	A635 Barnsley Bus Rapid Transit Route	**Point Load Index Result**	
Project No.	LT1983		
Engineer	Structural Soils Ltd		
Client	Structural Soils Ltd	Test method: ISRM 1985 : Suggested Method	

Hole ID	Sample depth m	Sample type	Sample no.	Specimen depth m	Specimen ref.	Description	Test Result								
							Type	W mm	D mm	D' mm	P kN	De mm	Is MN/m2	F	Is(50) MN/m2
BH06	10.90	C	14	10.90	1	Thinly laminated grey MUDSTONE.	A+P	104.92	48.1	42.62	2.4	75.46	0.42	1.2	0.51
BH06	10.90	C	14	10.90	2	Thinly laminated grey MUDSTONE.	I+P+X	85.4	57.38	54.6	1.08	77.05	0.18	1.21	0.22

Key

Point Load Type (Combination of)	D	Diametral		A	Axial
	I	Irregular lump		B	Block
	L	Parallel to planes of weakness		P	Perpendicular to planes of weakness
	X	Invalid failure of point load (not broken between points of load application)			
Dimensions	L	Distance between contact points and nearest free end (not applicable to axial tests)			
	W	Diameter of core or average smallest width perpendicular to axis of loading in a block or irregular lump			
	D	Distance between platens when just in contact with specimen			
	D'	Distance between platens at point of failure			
	De	Equivalent core diameter		Is	P/De2
	Is(50)	F x Is		F	(De/50)0.45
	Is(50)	point load strength index corrected for a diametral test of core diameter 50mm			
	For Axial/Lump tests De2 = (4/Pi) x (W x D')			For Diametral tests De2 = D x D'	

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Project No.	LT1983		
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Hole ID	Sample depth m	Sample type	Sample no.	Specimen depth m	Specimen ref.	Description	Test Result								
							Type	W mm	D mm	D' mm	P kN	De mm	Is MN/m2	F	Is(50) MN/m2
BH06	12.95	C	15	12.95	1	Thinly laminated grey MUDSTONE.	I+L	83.78	73.83	71.21	1.46	87.16	0.19	1.28	0.25
BH06	12.95	C	15	12.95	2	Thinly laminated grey MUDSTONE.	A+P	105.57	66.35	52.87	3.29	84.30	0.46	1.26	0.59

Key

Point Load Type (Combination of)	D	Diametral		A	Axial
	I	Irregular lump		B	Block
	L	Parallel to planes of weakness		P	Perpendicular to planes of weakness
	X	Invalid failure of point load (not broken between points of load application)			
Dimensions	L	Distance between contact points and nearest free end (not applicable to axial tests)			
	W	Diameter of core or average smallest width perpendicular to axis of loading in a block or irregular lump			
	D	Distance between platens when just in contact with specimen			
	D'	Distance between platens at point of failure			
	De	Equivalent core diameter		Is	P/De2
	Is(50)	F x Is		F	(De/50)0.45
	Is(50)	point load strength index corrected for a diametral test of core diameter 50mm			
	For Axial/Lump tests De2 = (4/Pi) x (W x D')			For Diametral tests De2 = D x D'	

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Project No.	LT1983		
Engineer	Structural Soils Ltd		
Client	Structural Soils Ltd	Test method: ISRM 1985 : Suggested Method	

Hole ID	Sample depth m	Sample type	Sample no.	Specimen depth m	Specimen ref.	Description	Test Result								
							Type	W mm	D mm	D' mm	P kN	De mm	Is MN/m2	F	Is(50) MN/m2
BH06	14.40	C	16	14.40	1	Thinly laminated grey MUDSTONE.	A+P+X	105.97	59.3	49.45	1.79	81.68	0.27	1.25	0.33
BH06	14.40	C	16	14.40	2	Thinly laminated grey MUDSTONE.	A+P	106.07	52.03	47.39	1.47	80.00	0.23	1.24	0.28

Key

Point Load Type	D	Diametral		A	Axial
(Combination of)	I	Irregular lump		B	Block
	L	Parallel to planes of weakness		P	Perpendicular to planes of weakness
	X	Invalid failure of point load (not broken between points of load application)			
Dimensions	L	Distance between contact points and nearest free end (not applicable to axial tests)			
	W	Diameter of core or average smallest width perpendicular to axis of loading in a block or irregular lump			
	D	Distance between platens when just in contact with specimen			
	D'	Distance between platens at point of failure			
	De	Equivalent core diameter		Is	P/De2
	Is(50)	F x Is		F	(De/50)0.45
	Is(50)	point load strength index corrected for a diametral test of core diameter 50mm			
	For Axial/Lump tests De2 = (4/Pi) x (W x D')			For Diametral tests De2 = D x D'	

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Project Name	A635 Barnsley Bus Rapid Transit Route	**Point Load Index Result**	
Project No.	LT1983		
Engineer	Structural Soils Ltd		
Client	Structural Soils Ltd	Test method: ISRM 1985 : Suggested Method	

Hole ID	Sample depth m	Sample type	Sample no.	Specimen depth m	Specimen ref.	Description	Test Result								
							Type	W mm	D mm	D' mm	P kN	De mm	Is MN/m2	F	Is(50) MN/m2
BH06	14.90	C	17	14.90	1	Thinly laminated grey SILTSTONE. L/D<0.5 due to insufficient specimen.	D+L	106.15	106.59	104.06	1.58	105.32	0.14	1.4	0.2
BH06	14.90	C	17	14.90	2	Thinly laminated grey SILTSTONE. Tested outside calibrated range of device	A+P	106.19	34.52	32.36	0.32	66.15	0.07	1.13	0.08

Key

Point Load Type (Combination of)	D	Diametral		A	Axial
	I	Irregular lump		B	Block
	L	Parallel to planes of weakness		P	Perpendicular to planes of weakness
	X	Invalid failure of point load (not broken between points of load application)			
Dimensions	L	Distance between contact points and nearest free end (not applicable to axial tests)			
	W	Diameter of core or average smallest width perpendicular to axis of loading in a block or irregular lump			
	D	Distance between platens when just in contact with specimen			
	D'	Distance between platens at point of failure			
	De	Equivalent core diameter		Is	P/De2
	Is(50)	F x Is		F	(De/50)0.45
	Is(50)	point load strength index corrected for a diametral test of core diameter 50mm			
	For Axial/Lump tests De2 = (4/Pi) x (W x D')			For Diametral tests De2 = D x D'	

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Project Name	A635 Barnsley Bus Rapid Transit Route	**Point Load Index Result**	
Project No.	LT1983		
Engineer	Structural Soils Ltd		
Client	Structural Soils Ltd	Test method: ISRM 1985 : Suggested Method	

Hole ID	Sample depth m	Sample type	Sample no.	Specimen depth m	Specimen ref.	Description	Test Result								
							Type	W mm	D mm	D' mm	P kN	De mm	Is MN/m2	F	Is(50) MN/m2
BH06	18.05	C	19	18.05	1	Thinly interlaminated grey SILTSTONE and SANDSTONE.	D+L+X	105.36	105.14	103.53	1.9	104.33	0.17	1.39	0.24
BH06	18.05	C	19	18.05	2	Thinly interlaminated grey SILTSTONE and SANDSTONE.	A+P+X	105.29	66.92	54.16	8.64	85.21	1.19	1.27	1.51

Key

Point Load Type (Combination of)	D	Diametral		A	Axial
	I	Irregular lump		B	Block
	L	Parallel to planes of weakness		P	Perpendicular to planes of weakness
	X	Invalid failure of point load (not broken between points of load application)			
Dimensions	L	Distance between contact points and nearest free end (not applicable to axial tests)			
	W	Diameter of core or average smallest width perpendicular to axis of loading in a block or irregular lump			
	D	Distance between platens when just in contact with specimen			
	D'	Distance between platens at point of failure			
	De	Equivalent core diameter		Is	P/De2
	Is(50)	F x Is		F	(De/50)0.45
	Is(50)	point load strength index corrected for a diametral test of core diameter 50mm			
	For Axial/Lump tests De2 = (4/Pi) x (W x D')			For Diametral tests De2 = D x D'	

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Project No.	LT1983		
Engineer	Structural Soils Ltd		
Client	Structural Soils Ltd	Test method: ISRM 1985 : Suggested Method	

Hole ID	Sample depth m	Sample type	Sample no.	Specimen depth m	Specimen ref.	Description	Test Result								
							Type	W mm	D mm	D' mm	P kN	De mm	Is MN/m2	F	Is(50) MN/m2
BH06	19.48	C	21	19.48	1	Thinly laminated grey SANDSTONE.	D+L	105.62	105.59	102.92	8.49	104.25	0.78	1.39	1.09
BH06	19.48	C	21	19.48	2	Thinly laminated grey SANDSTONE.	A+P	105.36	73.05	61.83	13.8	91.07	1.66	1.31	2.18

Key

Point Load Type	D	Diametral		A	Axial
(Combination of)	I	Irregular lump		B	Block
	L	Parallel to planes of weakness		P	Perpendicular to planes of weakness
	X	Invalid failure of point load (not broken between points of load application)			
Dimensions	L	Distance between contact points and nearest free end (not applicable to axial tests)			
	W	Diameter of core or average smallest width perpendicular to axis of loading in a block or irregular lump			
	D	Distance between platens when just in contact with specimen			
	D'	Distance between platens at point of failure			
	De	Equivalent core diameter		Is	P/De2
	Is(50)	F x Is		F	(De/50)0.45
	Is(50)	point load strength index corrected for a diametral test of core diameter 50mm			
	For Axial/Lump tests De2 = (4/Pi) x (W x D')			For Diametral tests De2 = D x D'	

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Steve Harper		Print date 31/10/2024	SOIL ENGINEERING
	Revision No. 3.00	Issue Date 07/12/2023	

Project Name	A635 Barnsley Bus Rapid Transit Route	**Point Load Index Result**	
Project No.	LT1983		
Engineer	Structural Soils Ltd		
Client	Structural Soils Ltd	Test method: ISRM 1985 : Suggested Method	

Hole ID	Sample depth m	Sample type	Sample no.	Specimen depth m	Specimen ref.	Description	Test Result								
							Type	W mm	D mm	D' mm	P kN	De mm	Is MN/m2	F	Is(50) MN/m2
BH06	7.35	C	12	7.35	1	Thinly laminated dark brownish grey MUDSTONE. Tested outside calibrated range of device	A+P+X	105.07	75.01	71.01	0.14	97.47	0.01	1.35	0.02
BH06	7.35	C	12	7.35	2	Thinly laminated dark brownish grey MUDSTONE. Tested outside calibrated range of device	A+P+X	105.07	71.01	62.66	0.36	91.56	0.04	1.31	0.06

Key

Point Load Type (Combination of)	D	Diametral		A	Axial
	I	Irregular lump		B	Block
	L	Parallel to planes of weakness		P	Perpendicular to planes of weakness
	X	Invalid failure of point load (not broken between points of load application)			
Dimensions	L	Distance between contact points and nearest free end (not applicable to axial tests)			
	W	Diameter of core or average smallest width perpendicular to axis of loading in a block or irregular lump			
	D	Distance between platens when just in contact with specimen			
	D'	Distance between platens at point of failure			
	De	Equivalent core diameter		Is	P/De2
	Is(50)	F x Is		F	(De/50)0.45
	Is(50)	point load strength index corrected for a diametral test of core diameter 50mm			
	For Axial/Lump tests De2 = (4/Pi) x (W x D')			For Diametral tests De2 = D x D'	

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							Type	W mm	D mm	D' mm	P kN	De mm	Is MN/m2	F	Is(50) MN/m2
BH06	9.00	C	13	9.00	1	Thinly laminated dark brownish grey MUDSTONE.	A+P+X	106.02	70.45	66.33	0.69	94.62	0.08	1.33	0.1
BH06	9.00	C	13	9.00	2	Thinly laminated dark brownish grey MUDSTONE.	I+P	60.03	34.78	31.88	1.15	49.36	0.47	0.99	0.47

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	De	Equivalent core diameter		Is	P/De2
	Is(50)	F x Is		F	(De/50)0.45
	Is(50)	point load strength index corrected for a diametral test of core diameter 50mm			
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Hole ID	Sample depth m	Sample type	Sample no.	Specimen depth m	Specimen ref.	Description	Test Result								
							Type	W mm	D mm	D' mm	P kN	De mm	Is MN/m2	F	Is(50) MN/m2
BH07	6.10	C	11	6.10	1	Thinly laminated grey SANDSTONE.	D+L	53.76	53.68	52.36	0.96	53.02	0.34	1.03	0.35
BH07	6.10	C	11	6.10	2	Thinly laminated grey SANDSTONE.	A+P+X	53.76	47.14	44.33	0.77	55.09	0.25	1.04	0.27

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	De	Equivalent core diameter		Is	P/De2
	Is(50)	F x Is		F	(De/50)0.45
	Is(50)	point load strength index corrected for a diametral test of core diameter 50mm			
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							Type	W mm	D mm	D' mm	P kN	De mm	Is MN/m2	F	Is(50) MN/m2
BH07	6.49	C	12	6.49	1	Thinly laminated grey SANDSTONE.	D+L	106.63	106.54	103.31	1.17	104.91	0.11	1.4	0.15
BH07	6.49	C	12	6.49	2	Thinly laminated grey SANDSTONE.	A+P	106.55	69.48	56.39	3.9	87.46	0.51	1.29	0.66

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