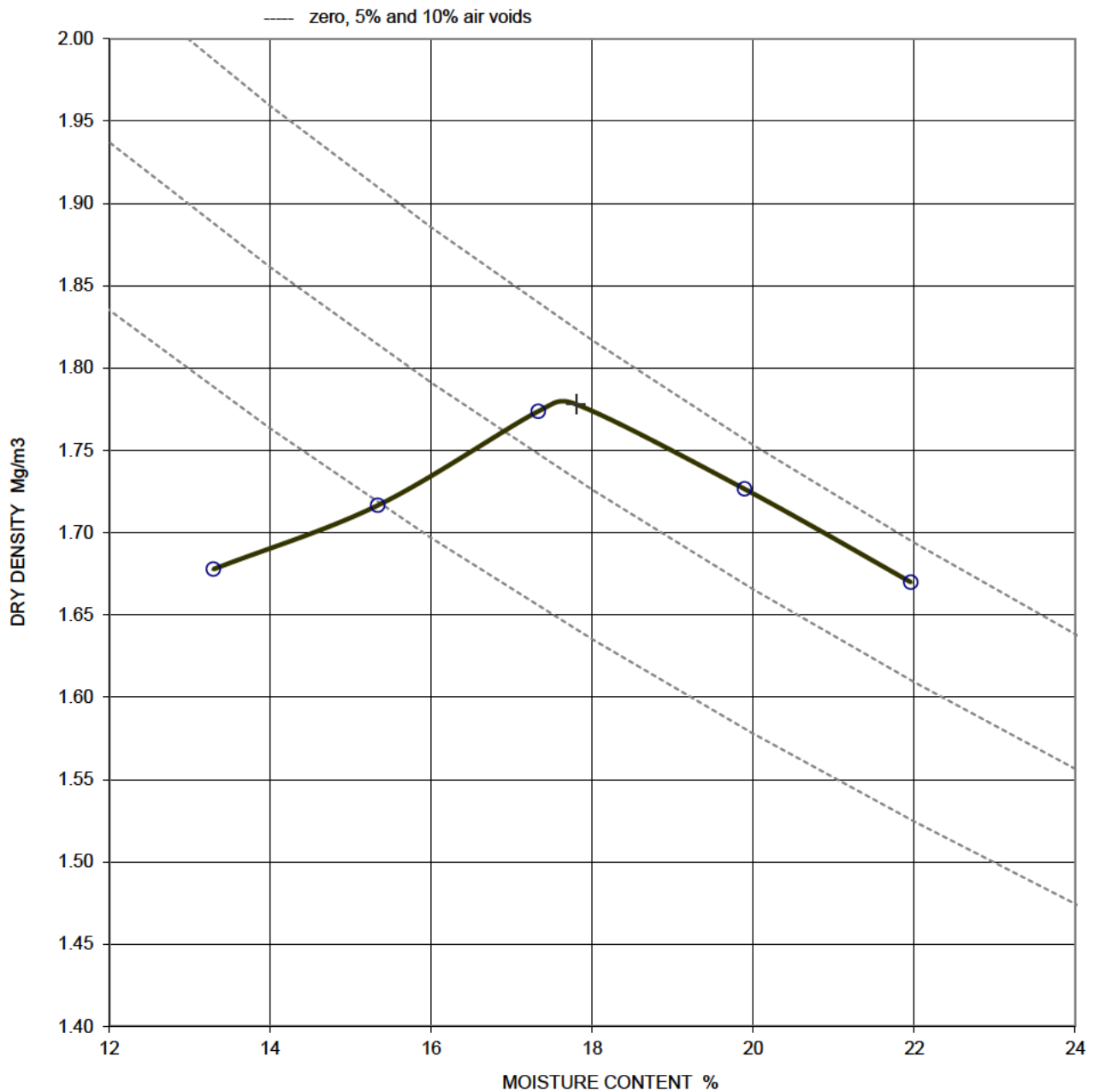


DRY DENSITY / MOISTURE CONTENT RELATIONSHIP
BS1377 : PART 4 : 1990 : LIGHT COMPACTION, 2.5 kg rammer

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-09
	A9031-19-20191129110433	Sample Depth (m BGL)	4.65 - 5.20
		Sample Type and No	B18
		Specimen Ref	



Soil description Brown slightly sandy CLAY.

Test method BS 1377:part 4:1990: clause 3.5, 2.5 kg rammer in a 1 litre mould
 Preparation Original material was natural, single sample tested
 Material > 37.5mm 0 %
 Material < 37.5mm > 20mm 0 %
 Particle density 2.70 assumed
 Remarks

Derived Parameters +

Maximum dry density, Mg/m³
1.78
 Optimum moisture content, %
18

QA Ref
 SLD 4, 3.3/4
 Rev 2.5
 Sep 17



Project No A9031-19
 Project Name HAVANT THICKET WATER STORAGE

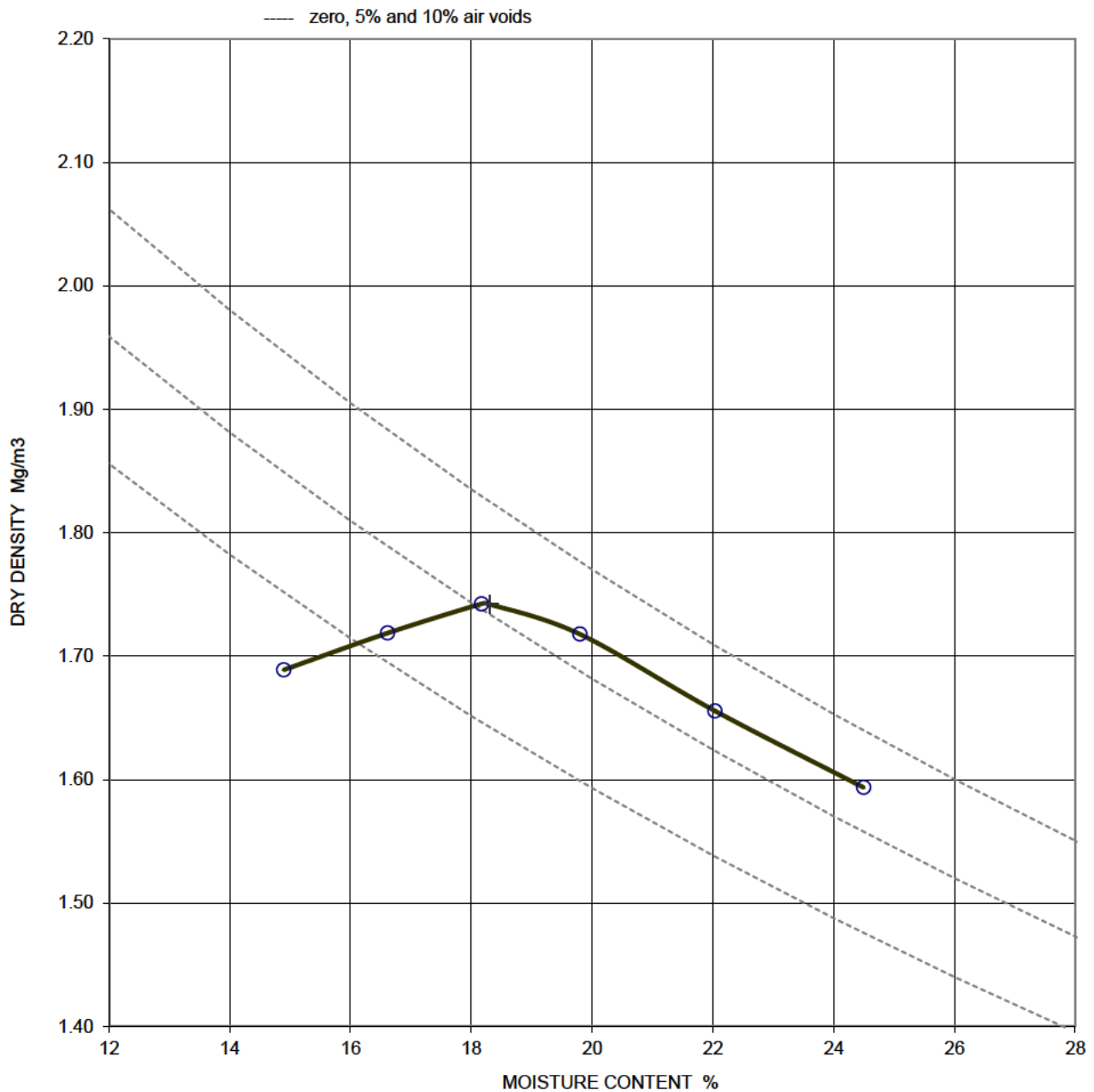
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DRY DENSITY / MOISTURE CONTENT RELATIONSHIP
BS1377 : PART 4 : 1990 : LIGHT COMPACTION, 2.5 kg rammer

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-09
	A9031-19-20191129110932	Sample Depth (m BGL)	6.95 - 7.20
		Sample Type and No	B25
		Specimen Ref	



Soil description Brown slightly sandy CLAY.

Test method BS 1377:part 4:1990: clause 3.5, 2.5 kg rammer in a 1 litre mould
 Preparation Original material was natural, single sample tested
 Material > 37.5mm 0 %
 Material < 37.5mm > 20mm 0 %
 Particle density 2.74 assumed
 Remarks

Derived Parameters +

Maximum dry density, Mg/m³
1.74
 Optimum moisture content, %
18

QA Ref
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Project No A9031-19
 Project Name HAVANT THICKET WATER STORAGE

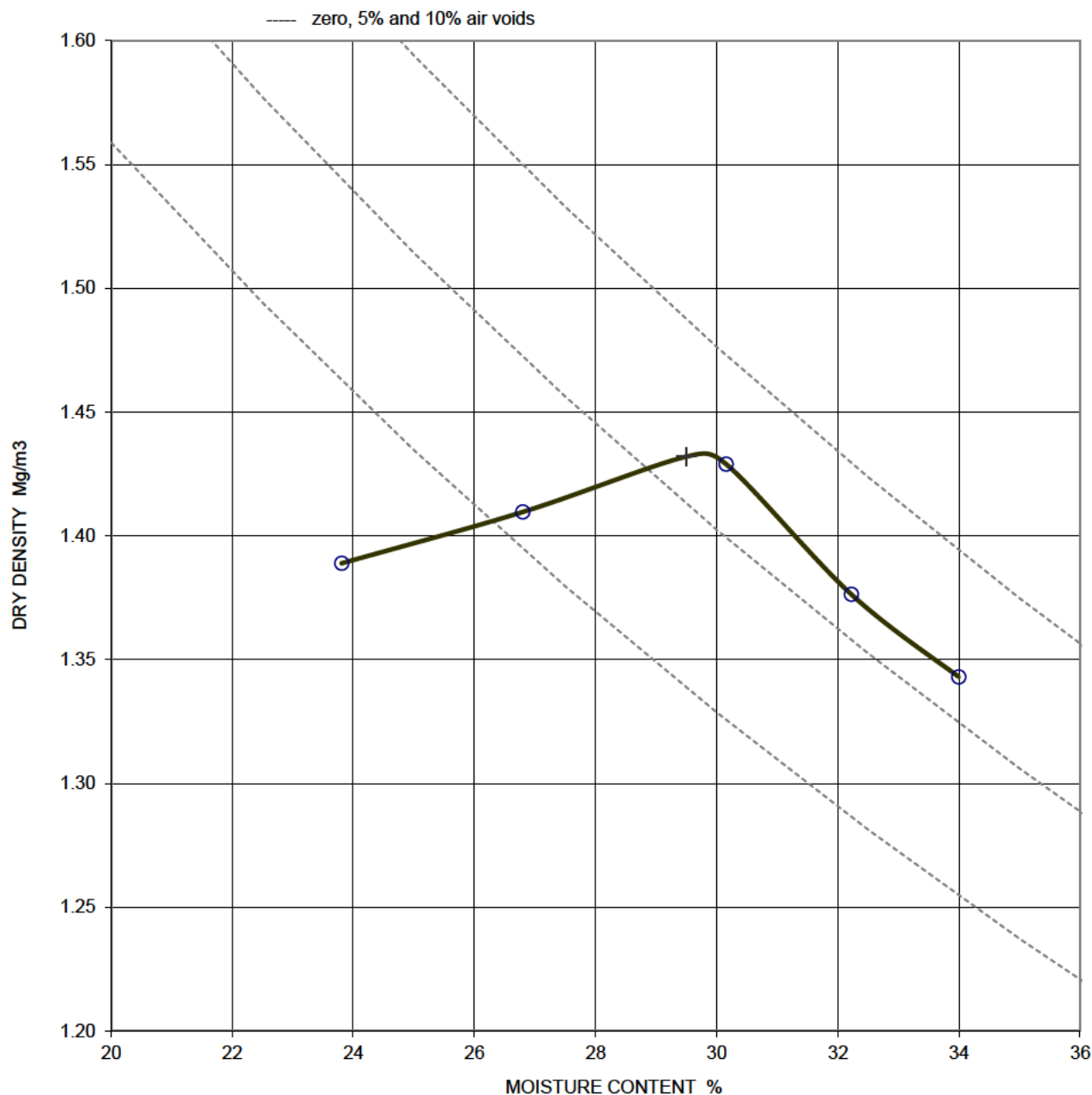
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DRY DENSITY / MOISTURE CONTENT RELATIONSHIP
BS1377 : PART 4 : 1990 : LIGHT COMPACTION, 2.5 kg rammer

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-10
	A9031-1920191122011719	Sample Depth (m BGL)	3.50 - 4.00
		Sample Type and No	B14
		Specimen Ref	



Soil description Brown slightly sandy CLAY.

Test method BS 1377:part 4:1990: clause 3.5, 2.5 kg rammer in a 1 litre mould

Preparation Original material was natural, single sample tested

Material > 37.5mm 0 %

Material < 37.5mm > 20mm 0 %

Particle density 2.65 assumed

Remarks

Derived Parameters +

Maximum dry density, Mg/m³
1.43

Optimum moisture content, %
30

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Project Name HAVANT THICKET WATER STORAGE

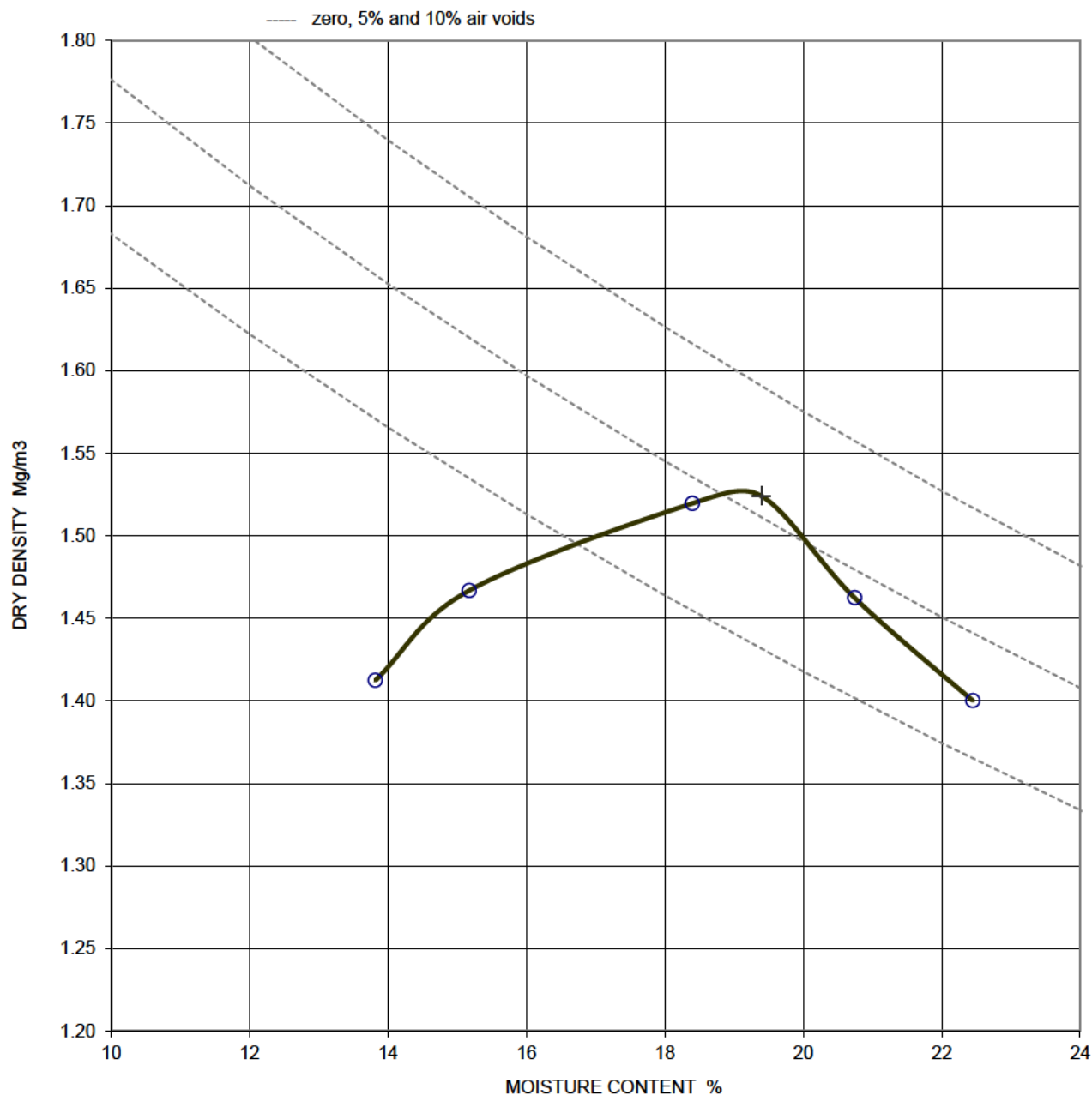
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DRY DENSITY / MOISTURE CONTENT RELATIONSHIP
BS1377 : PART 4 : 1990 : LIGHT COMPACTION, 2.5 kg rammer

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-11
	A9031-1920191219104933	Sample Depth (m BGL)	1.20 - 1.70
		Sample Type and No	B8
		Specimen Ref	



Soil description Brown slightly sandy slightly gravelly CLAY.

Test method BS 1377:part 4:1990: clause 3.5, 2.5 kg rammer in a 1 litre mould

Preparation Original material was natural, single sample tested

Material > 37.5mm 0 %

Material < 37.5mm > 20mm 0 %

Particle density 2.30 assumed

Remarks

Derived Parameters +

Maximum dry density, Mg/m³

1.52

Optimum moisture content, %

19

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Project Name HAVANT THICKET WATER STORAGE

Figure

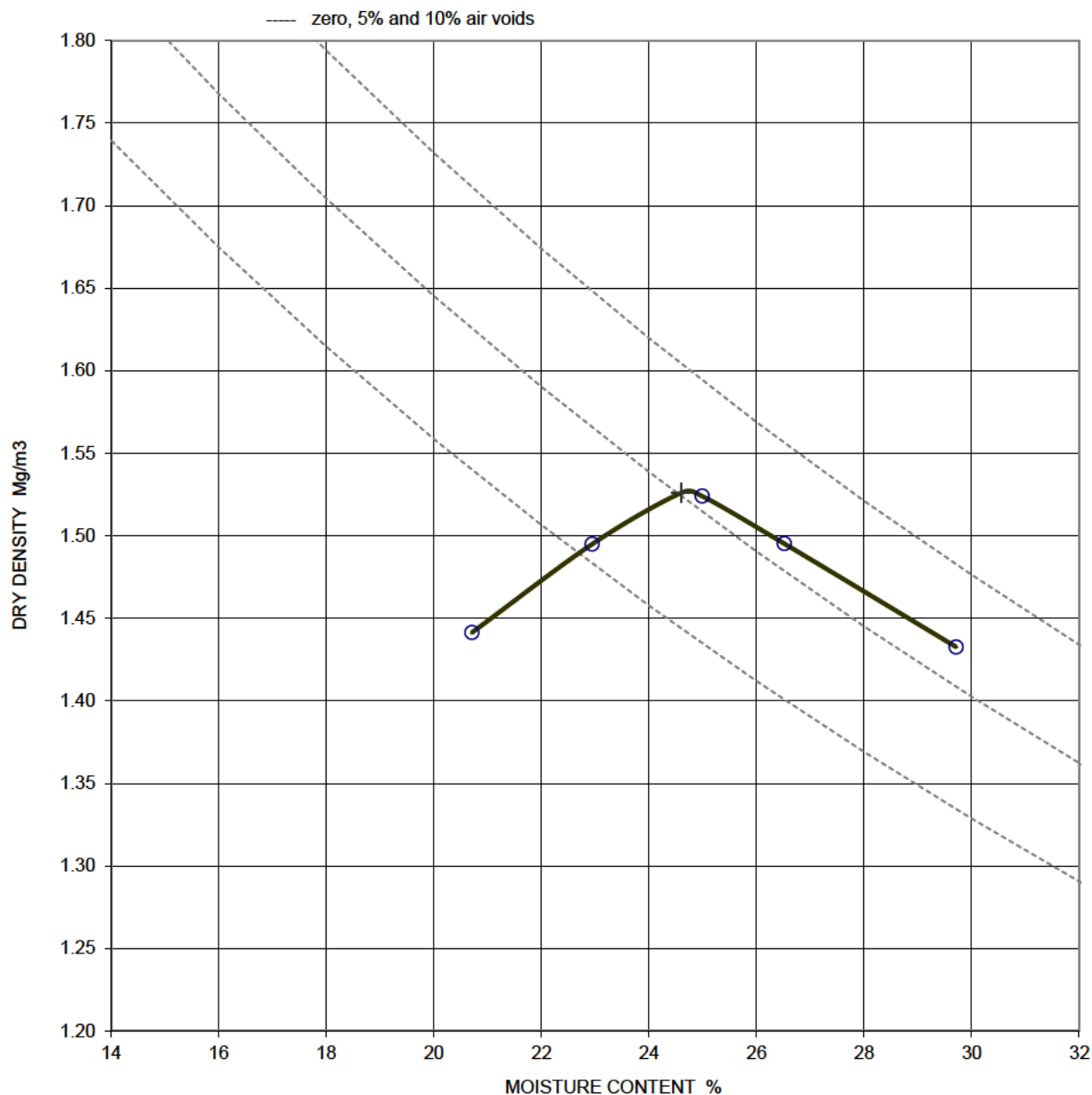
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DRY DENSITY / MOISTURE CONTENT RELATIONSHIP
BS1377 : PART 4 : 1990 : LIGHT COMPACTION, 2.5 kg rammer

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-11
	A9031-1920191219105135	Sample Depth (m BGL)	5.00 - 5.50
		Sample Type and No	B24
		Specimen Ref	



Soil description Brown slightly sandy CLAY.

Test method BS 1377:part 4:1990: clause 3.5, 2.5 kg rammer in a 1 litre mould

Preparation Original material was natural, single sample tested

Material > 37.5mm 0 %

Material < 37.5mm > 20mm 0 %

Particle density 2.65 assumed

Remarks

Derived Parameters +

Maximum dry density, Mg/m³

1.53

Optimum moisture content, %

25

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Project Name HAVANT THICKET WATER STORAGE

Figure

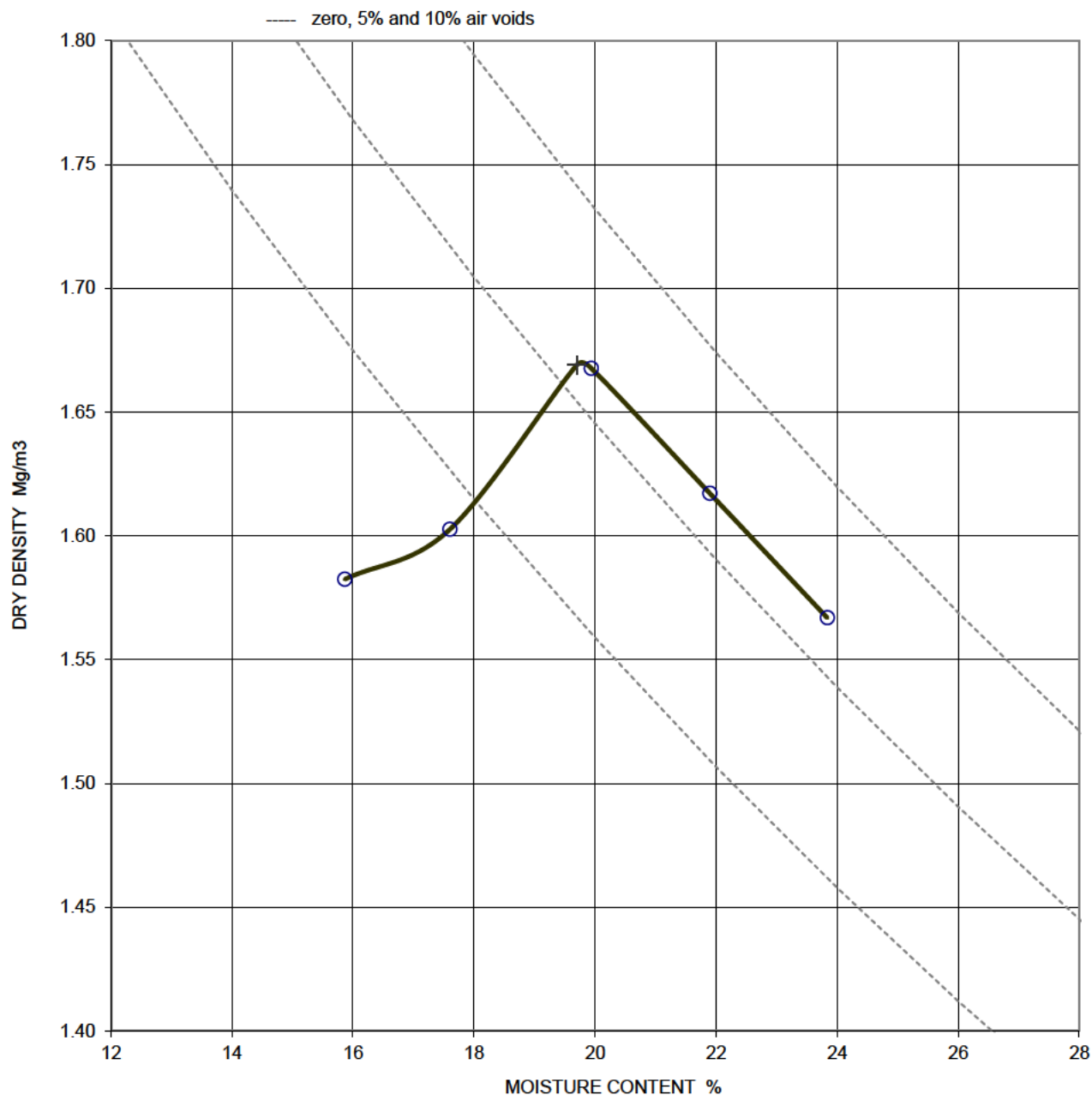
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DRY DENSITY / MOISTURE CONTENT RELATIONSHIP
BS1377 : PART 4 : 1990 : LIGHT COMPACTION, 2.5 kg rammer

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-12
	A9031-1920191121112258	Sample Depth (m BGL)	1.20 - 1.70
		Sample Type and No	B6
		Specimen Ref	



Soil description Brown slightly sandy slightly gravelly CLAY.

Test method BS 1377:part 4:1990: clause 3.5, 2.5 kg rammer in a 1 litre mould
 Preparation Original material was natural, single sample tested
 Material > 37.5mm 0 %
 Material < 37.5mm > 20mm 0 %
 Particle density 2.65 assumed
 Remarks

Derived Parameters +

Maximum dry density, Mg/m3
1.67
 Optimum moisture content, %
20

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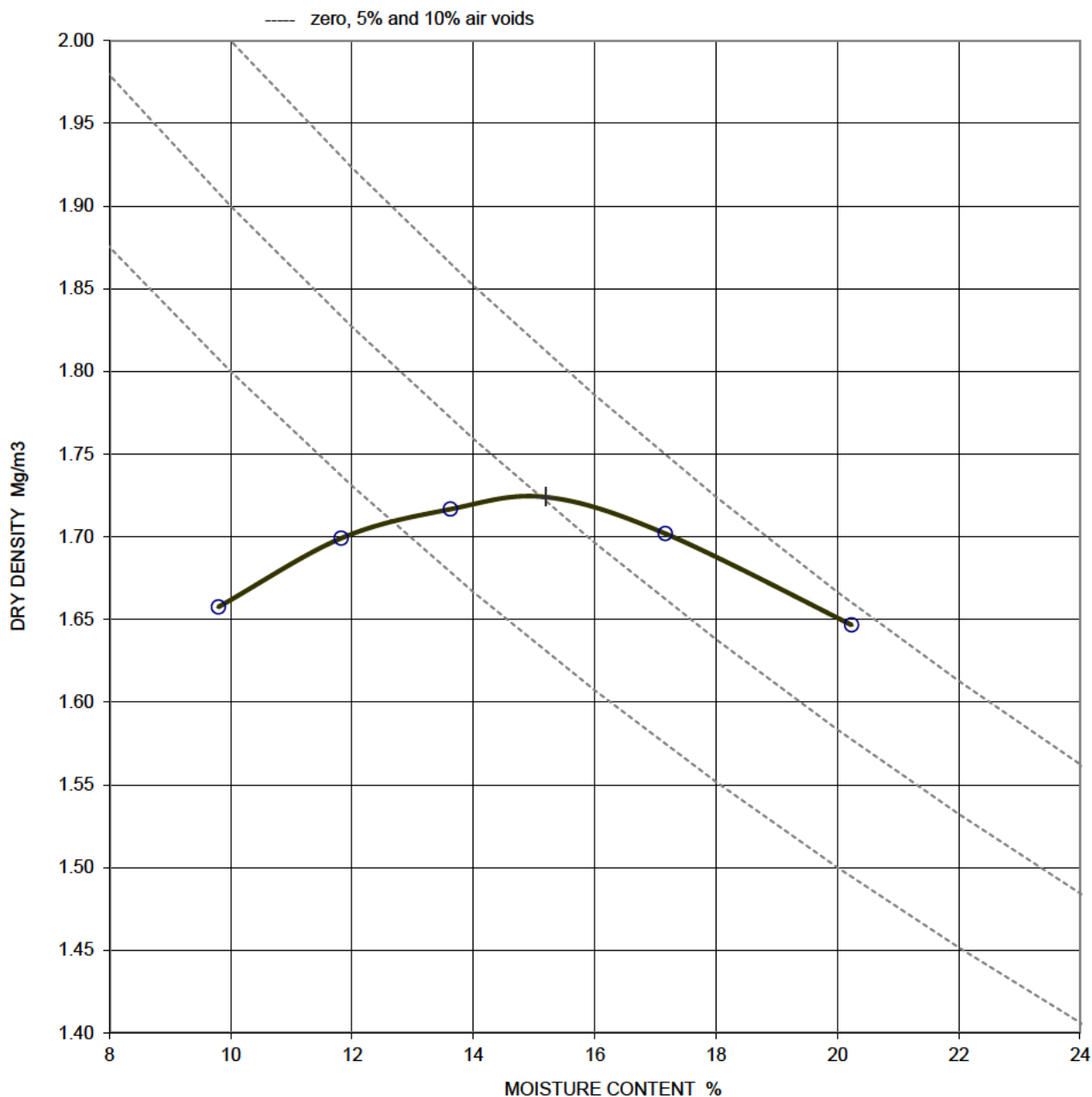
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DRY DENSITY / MOISTURE CONTENT RELATIONSHIP
BS1377 : PART 4 : 1990 : LIGHT COMPACTION, 2.5 kg rammer

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-12
	A9031-1920191121112346	Sample Depth (m BGL)	3.00 - 3.50
		Sample Type and No	B12
		Specimen Ref	



Soil description Brown slightly sandy CLAY.

Test method BS 1377:part 4:1990: clause 3.5, 2.5 kg rammer in a 1 litre mould

Preparation Original material was natural, single sample tested

Material > 37.5mm 0 %

Material < 37.5mm > 20mm 0 %

Particle density 2.50 assumed

Remarks Replaces ATK-CP-12 D11.

Derived Parameters +

Maximum dry density, Mg/m³

1.72

Optimum moisture content, %

15

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Project Name HAVANT THICKET WATER STORAGE

Figure

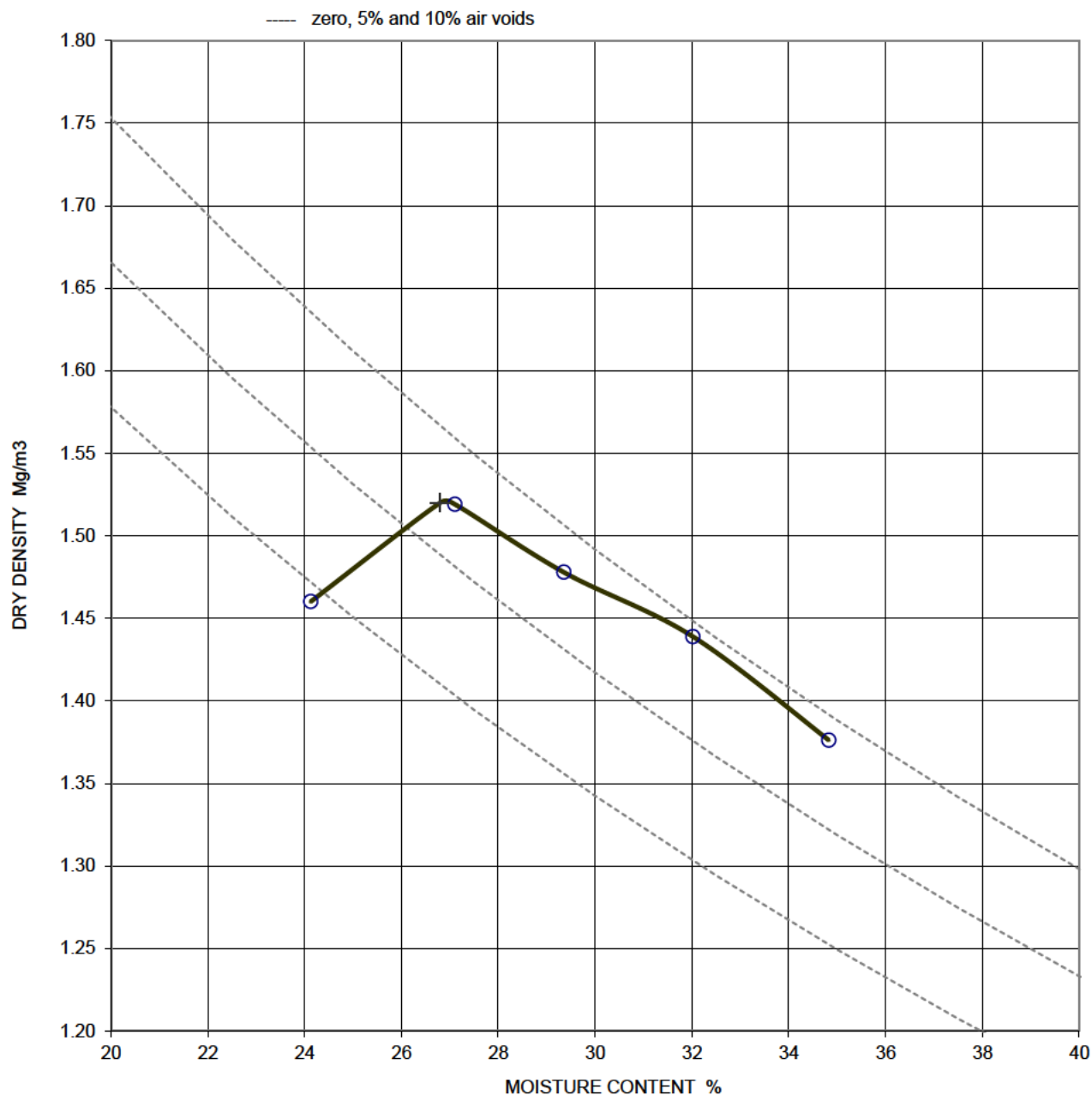
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DRY DENSITY / MOISTURE CONTENT RELATIONSHIP
BS1377 : PART 4 : 1990 : LIGHT COMPACTION, 2.5 kg rammer

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-13A
	A9031-1920191127033323	Sample Depth (m BGL)	0.50 - 0.80
		Sample Type and No	B4
		Specimen Ref	



Soil description Brown slightly sandy CLAY.

Test method BS 1377:part 4:1990: clause 3.5, 2.5 kg rammer in a 1 litre mould

Preparation Original material was natural, single sample tested

Material > 37.5mm 0 %

Material < 37.5mm > 20mm 0 %

Particle density 2.70 assumed

Remarks

Derived Parameters +

Maximum dry density, Mg/m³
1.52

Optimum moisture content, %
27

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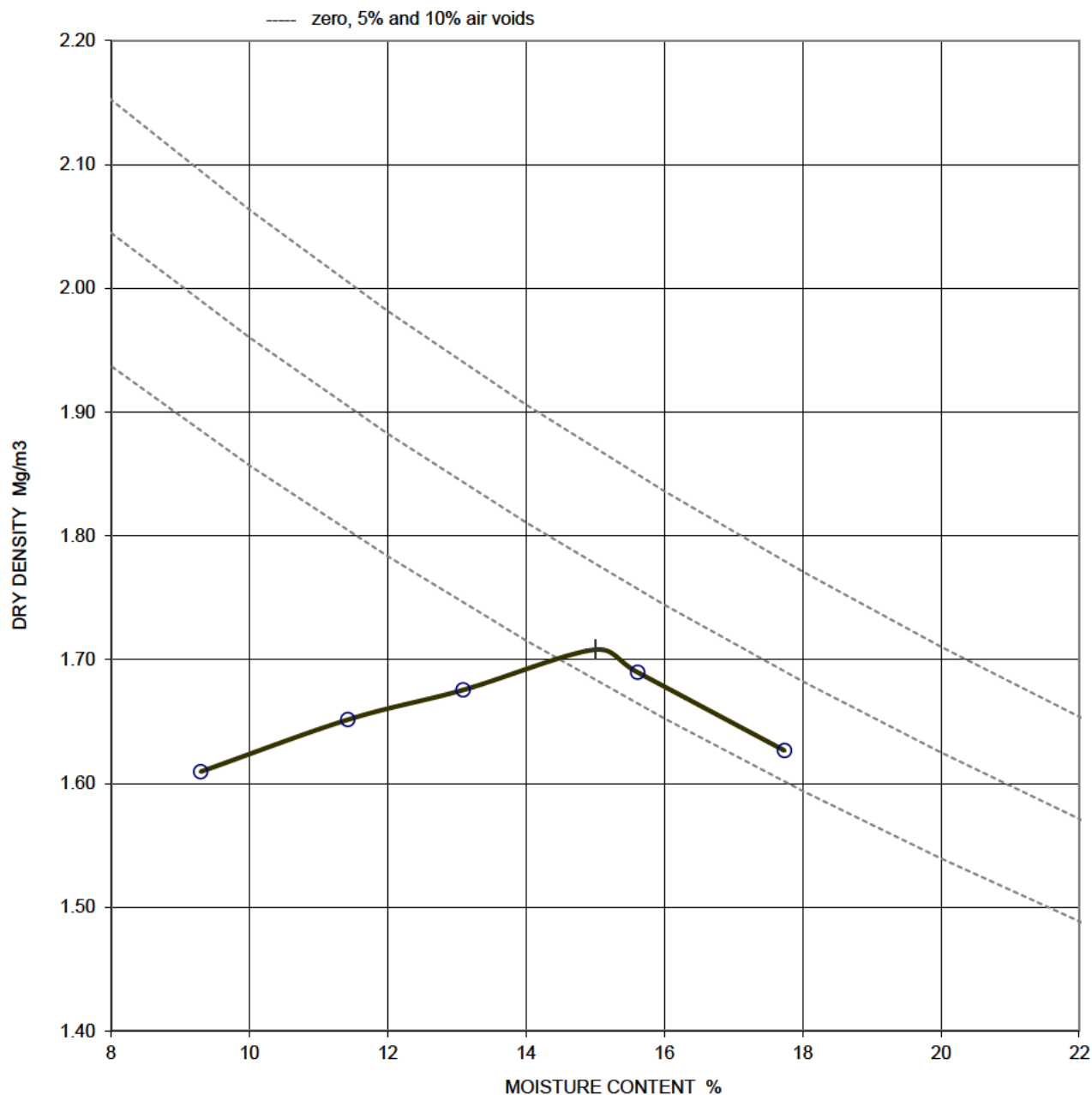
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DRY DENSITY / MOISTURE CONTENT RELATIONSHIP
BS1377 : PART 4 : 1990 : LIGHT COMPACTION, 2.5 kg rammer

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-13A
	A9031-1920191127033721	Sample Depth (m BGL)	2.00 - 2.50
		Sample Type and No	B12
		Specimen Ref	



Soil description Brown slightly gravelly sandy CLAY.

Test method BS 1377:part 4:1990: clause 3.5, 2.5 kg rammer in a 1 litre mould

Preparation Original material was natural, single sample tested

Material > 37.5mm 0 %

Material < 37.5mm > 20mm 2 %

Particle density 2.60 assumed

Remarks

Derived Parameters +

Maximum dry density, Mg/m³
1.71

Optimum moisture content, %
15

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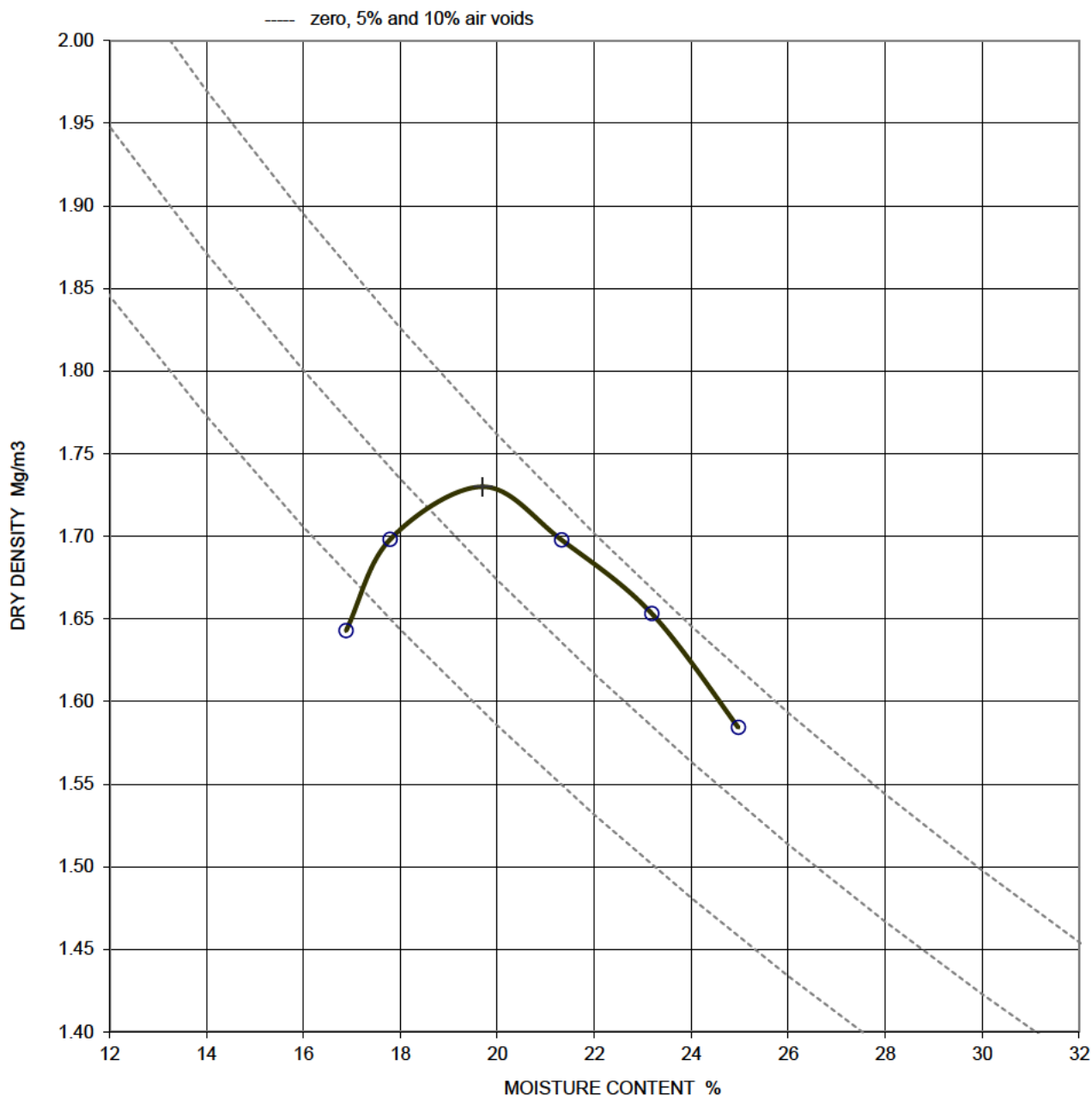
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DRY DENSITY / MOISTURE CONTENT RELATIONSHIP
BS1377 : PART 4 : 1990 : LIGHT COMPACTION, 2.5 kg rammer

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-13A
	A9031-1920191127033838	Sample Depth (m BGL)	5.00 - 5.50
		Sample Type and No	B24
		Specimen Ref	



Soil description Brown slightly sandy CLAY.

Test method BS 1377:part 4:1990: clause 3.5, 2.5 kg rammer in a 1 litre mould

Preparation Original material was natural, single sample tested

Material > 37.5mm 0 %

Material < 37.5mm > 20mm 0 %

Particle density 2.72 assumed

Remarks

Derived Parameters +

Maximum dry density, Mg/m³

1.73

Optimum moisture content, %

20

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SLD 4, 3.3/4
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Project Name HAVANT THICKET WATER STORAGE

Figure

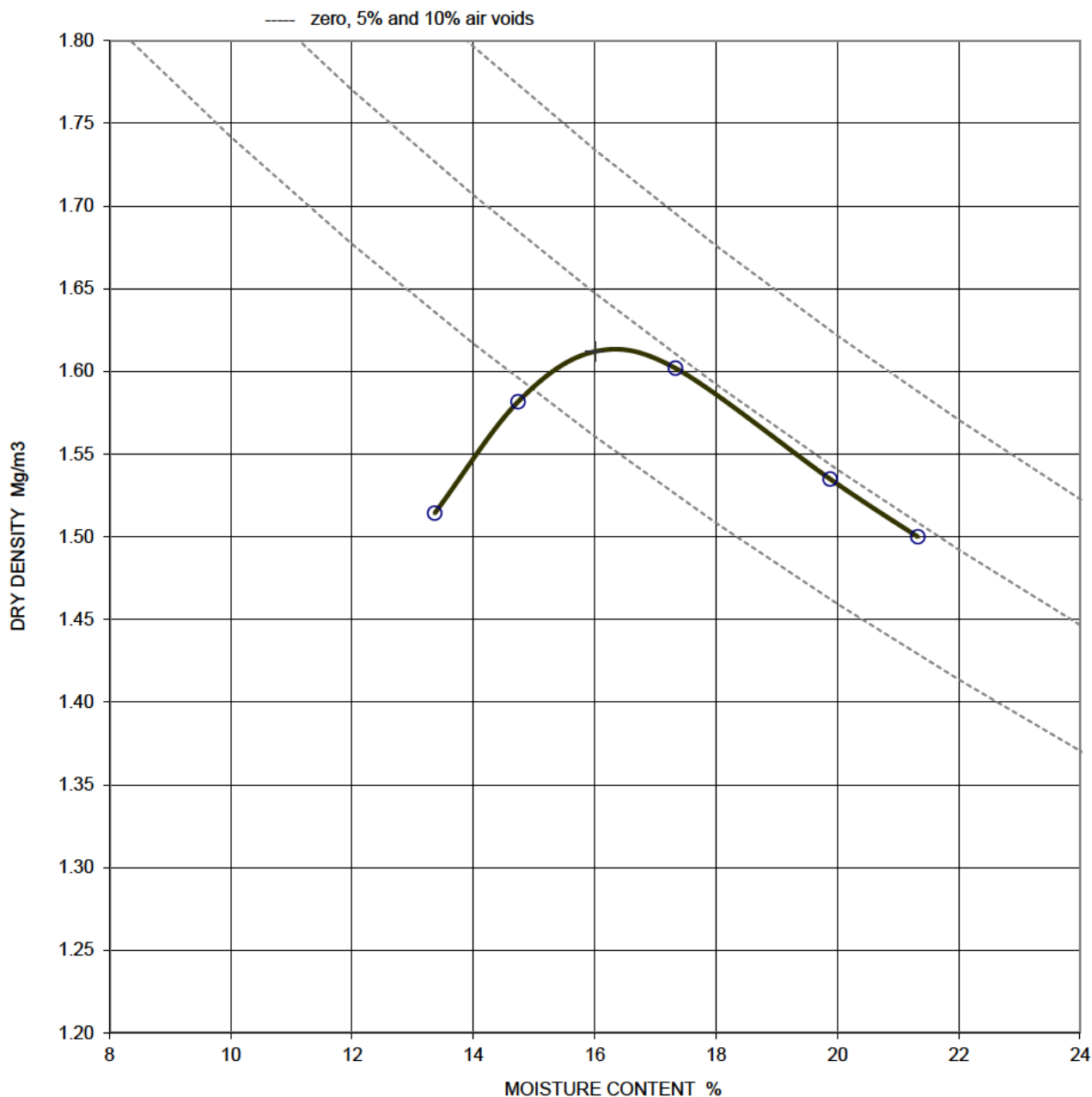
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DRY DENSITY / MOISTURE CONTENT RELATIONSHIP
BS1377 : PART 4 : 1990 : LIGHT COMPACTION, 2.5 kg rammer

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-14
	A9031-1920191213110749	Sample Depth (m BGL)	0.50 - 1.00
		Sample Type and No	B3
		Specimen Ref	



Soil description Brown slightly sandy CLAY.

Test method BS 1377:part 4:1990: clause 3.5, 2.5 kg rammer in a 1 litre mould

Preparation Original material was natural, single sample tested

Material > 37.5mm 0 %

Material < 37.5mm > 20mm 0 %

Particle density 2.40 assumed

Remarks

Derived Parameters +

Maximum dry density, Mg/m³

1.61

Optimum moisture content, %

16

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Figure

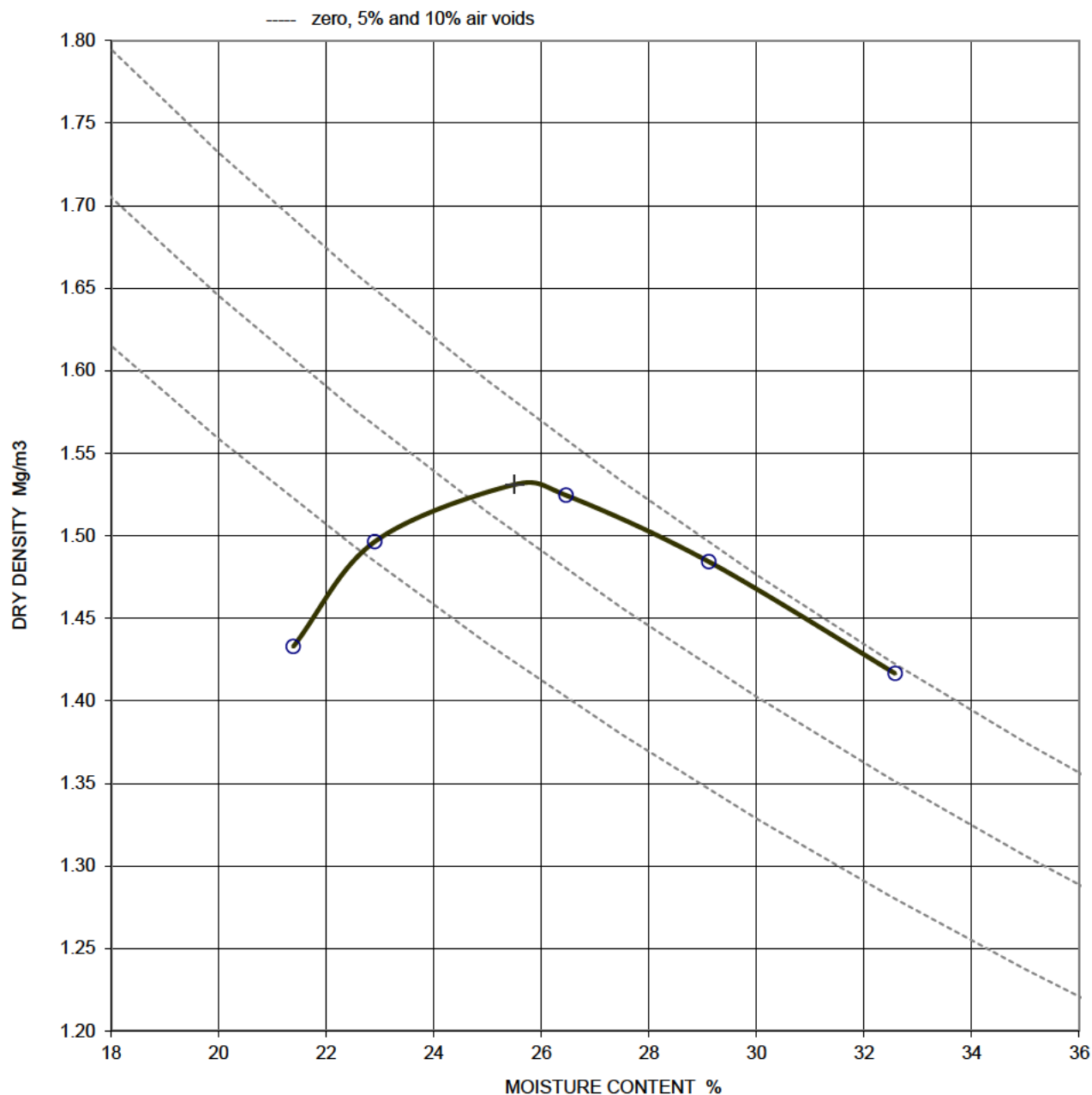
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DRY DENSITY / MOISTURE CONTENT RELATIONSHIP
BS1377 : PART 4 : 1990 : LIGHT COMPACTION, 2.5 kg rammer

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-14
	A9031-1920191218101937	Sample Depth (m BGL)	2.50 - 3.00
		Sample Type and No	B9
		Specimen Ref	



Soil description Brown slightly sandy slightly gravelly CLAY.

Test method BS 1377:part 4:1990: clause 3.5, 2.5 kg rammer in a 1 litre mould
 Preparation Original material was natural, single sample tested
 Material > 37.5mm 0 %
 Material < 37.5mm > 20mm 0 %
 Particle density 2.65 assumed
 Remarks Combined with ATK-CP-14 B11

Derived Parameters +

Maximum dry density, Mg/m³
1.53
 Optimum moisture content, %
26

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 SLD 4, 3.3/4
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 Project Name HAVANT THICKET WATER STORAGE

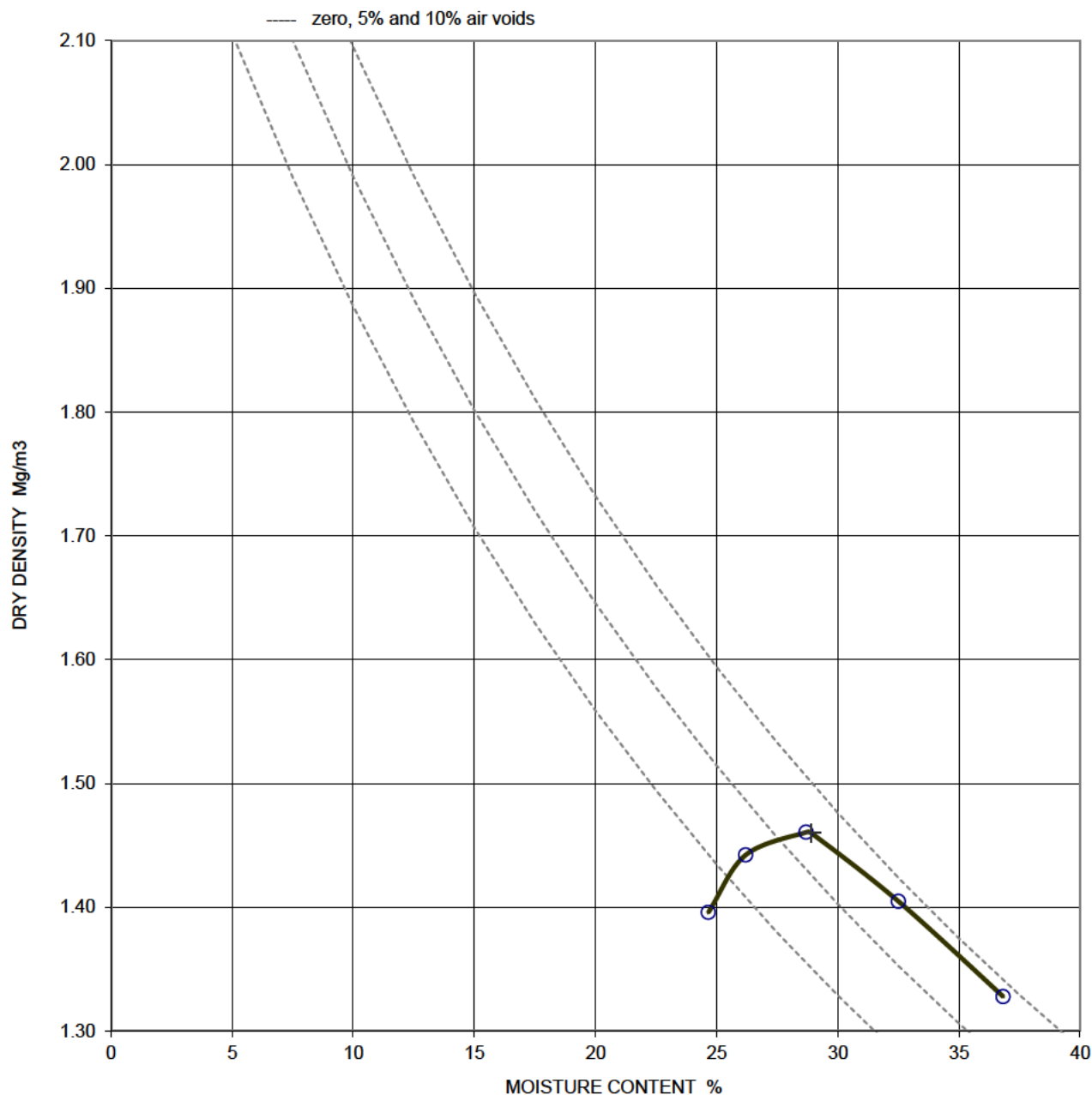
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DRY DENSITY / MOISTURE CONTENT RELATIONSHIP
BS1377 : PART 4 : 1990 : LIGHT COMPACTION, 2.5 kg rammer

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-15
	A9031-1920191212110228	Sample Depth (m BGL)	0.50 - 0.80
		Sample Type and No	B4
		Specimen Ref	



Soil description Brown slightly sandy CLAY.

Test method BS 1377:part 4:1990: clause 3.5, 2.5 kg rammer in a 1 litre mould

Preparation Original material was natural, single sample tested

Material > 37.5mm 0 %

Material < 37.5mm > 20mm 0 %

Particle density 2.65 assumed

Remarks

Derived Parameters +

Maximum dry density, Mg/m³
1.46

Optimum moisture content, %
29

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 Project Name HAVANT THICKET WATER STORAGE

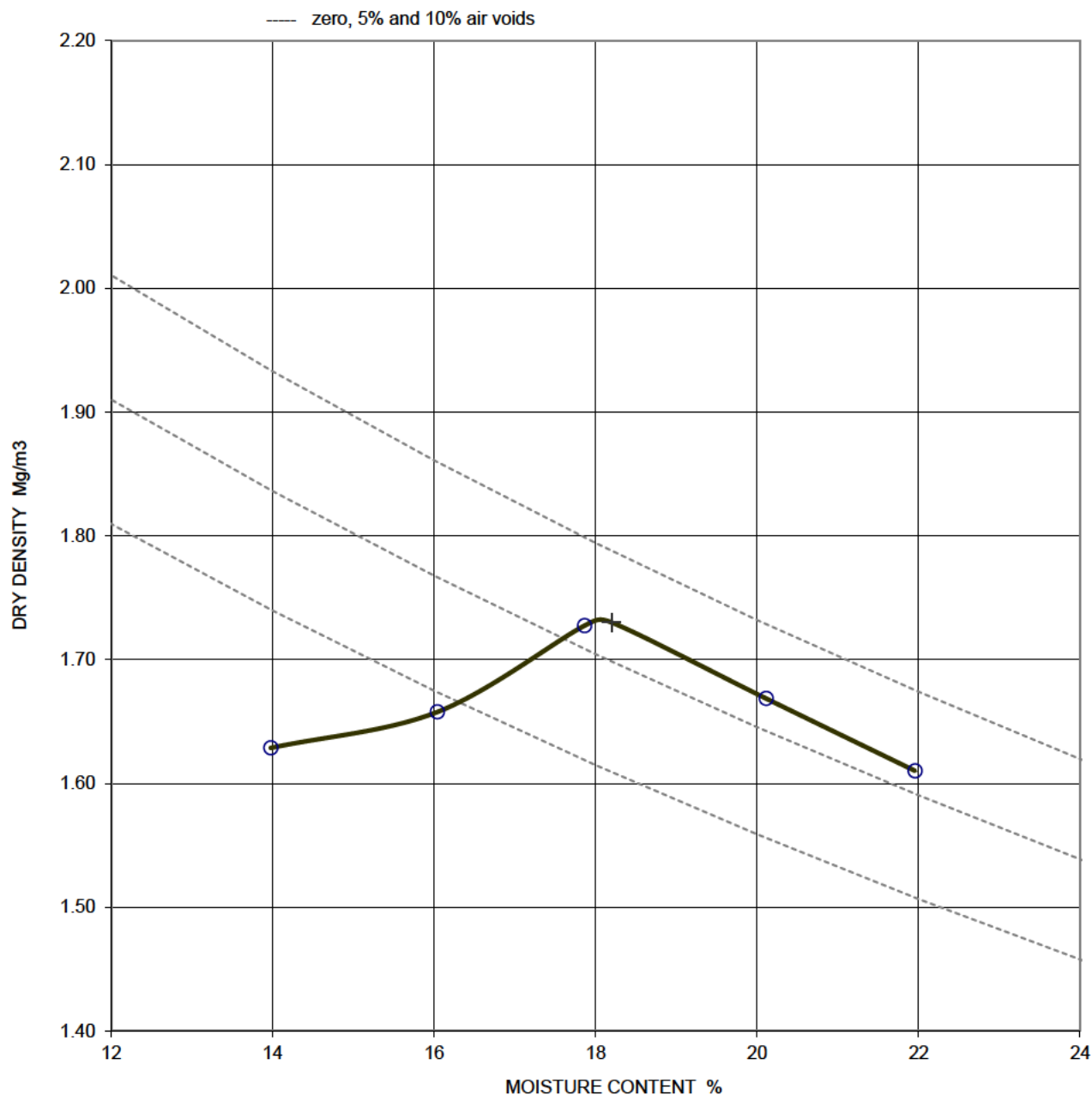
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DRY DENSITY / MOISTURE CONTENT RELATIONSHIP
BS1377 : PART 4 : 1990 : LIGHT COMPACTION, 2.5 kg rammer

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-15
	A9031-1920191212110418	Sample Depth (m BGL)	2.00 - 2.50
		Sample Type and No	B11
		Specimen Ref	



Soil description Grey and brown slightly sandy CLAY.

Test method BS 1377:part 4:1990: clause 3.5, 2.5 kg rammer in a 1 litre mould
 Preparation Original material was natural, single sample tested
 Material > 37.5mm 0 %
 Material < 37.5mm > 20mm 0 %
 Particle density 2.65 assumed
 Remarks

Derived Parameters +

Maximum dry density, Mg/m³
1.73
 Optimum moisture content, %
18

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 SLD 4, 3.3/4
 Rev 2.5
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 Project Name HAVANT THICKET WATER STORAGE

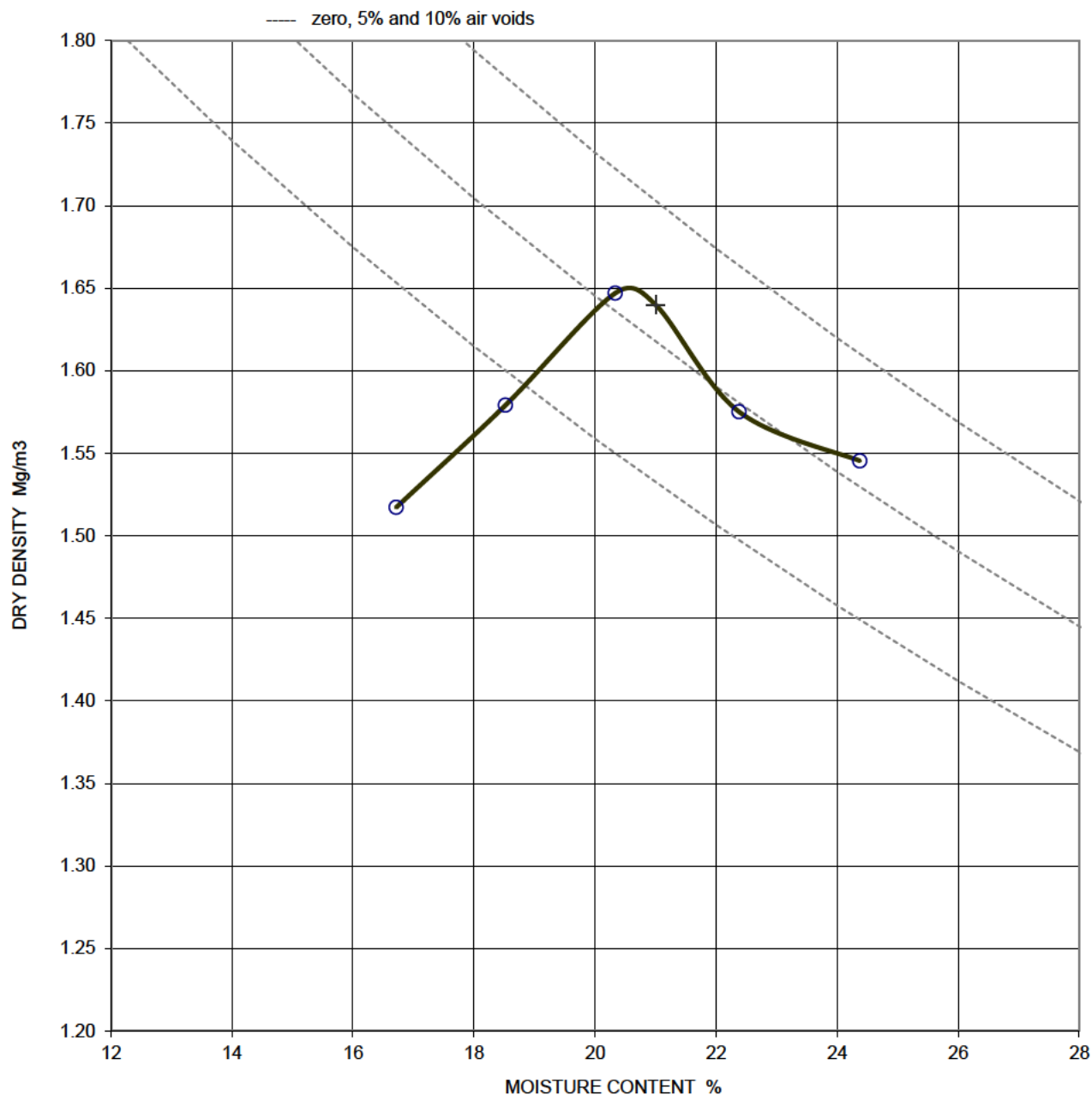
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DRY DENSITY / MOISTURE CONTENT RELATIONSHIP
BS1377 : PART 4 : 1990 : LIGHT COMPACTION, 2.5 kg rammer

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-15
	A9031-1920191204052617	Sample Depth (m BGL)	6.00 - 6.50
		Sample Type and No	B26
		Specimen Ref	



Soil description Dark greyish brown slightly sandy CLAY.

Test method BS 1377:part 4:1990: clause 3.5, 2.5 kg rammer in a 1 litre mould

Preparation Original material was natural, single sample tested

Material > 37.5mm 0 %

Material < 37.5mm > 20mm 0 %

Particle density 2.65 assumed

Remarks

Derived Parameters +

Maximum dry density, Mg/m³
1.64

Optimum moisture content, %
21

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 Project Name HAVANT THICKET WATER STORAGE

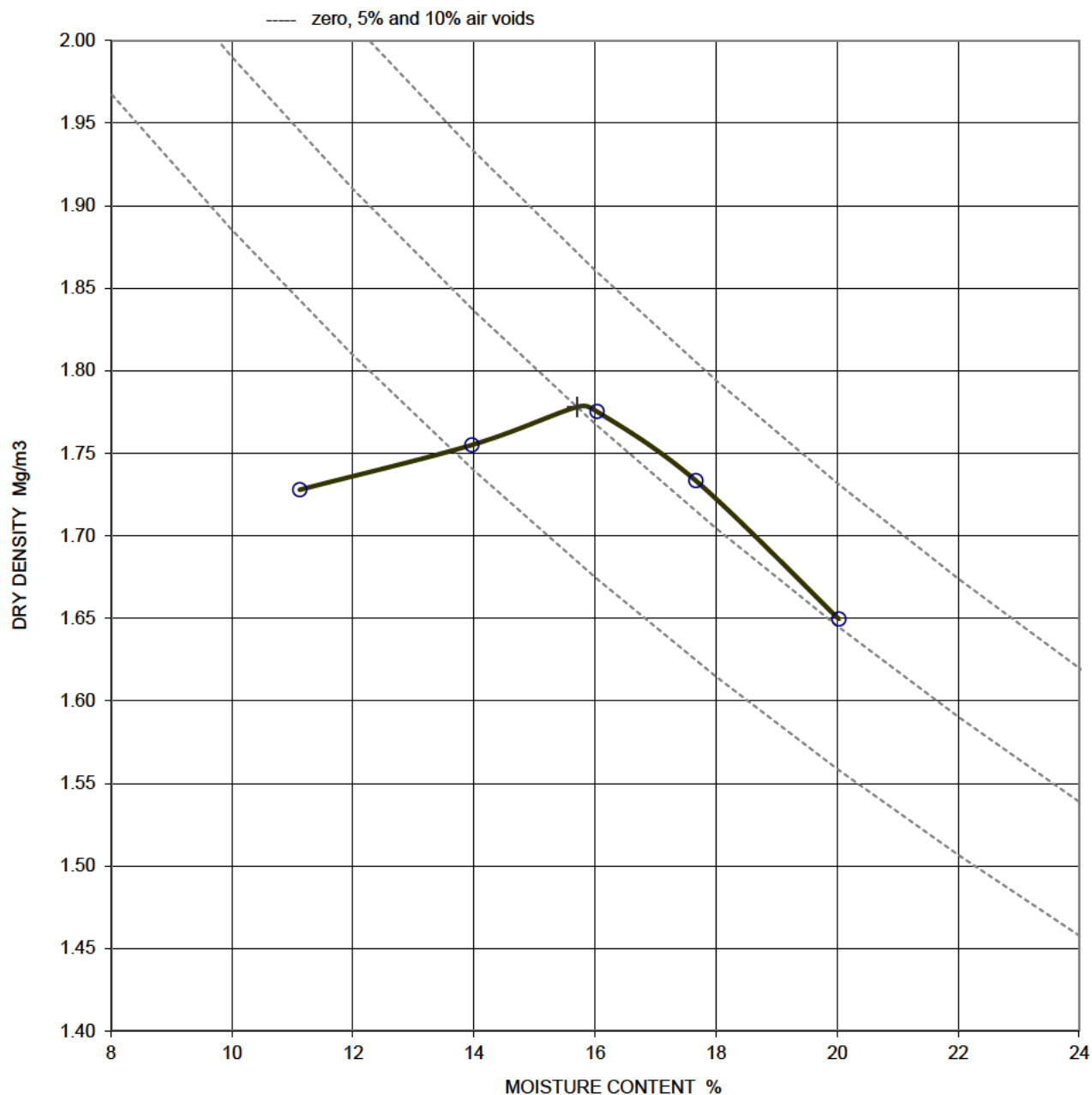
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DRY DENSITY / MOISTURE CONTENT RELATIONSHIP
BS1377 : PART 4 : 1990 : LIGHT COMPACTION, 2.5 kg rammer

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-16
	A9031-1920191219115957	Sample Depth (m BGL)	2.50 - 3.00
		Sample Type and No	B4
		Specimen Ref	



Soil description Brown slightly sandy CLAY.

Test method BS 1377:part 4:1990: clause 3.5, 2.5 kg rammer in a 1 litre mould

Preparation Original material was natural, single sample tested

Material > 37.5mm 0 %

Material < 37.5mm > 20mm 0 %

Particle density 2.65 assumed

Remarks

Derived Parameters +

Maximum dry density, Mg/m³

1.78

Optimum moisture content, %

16

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Figure

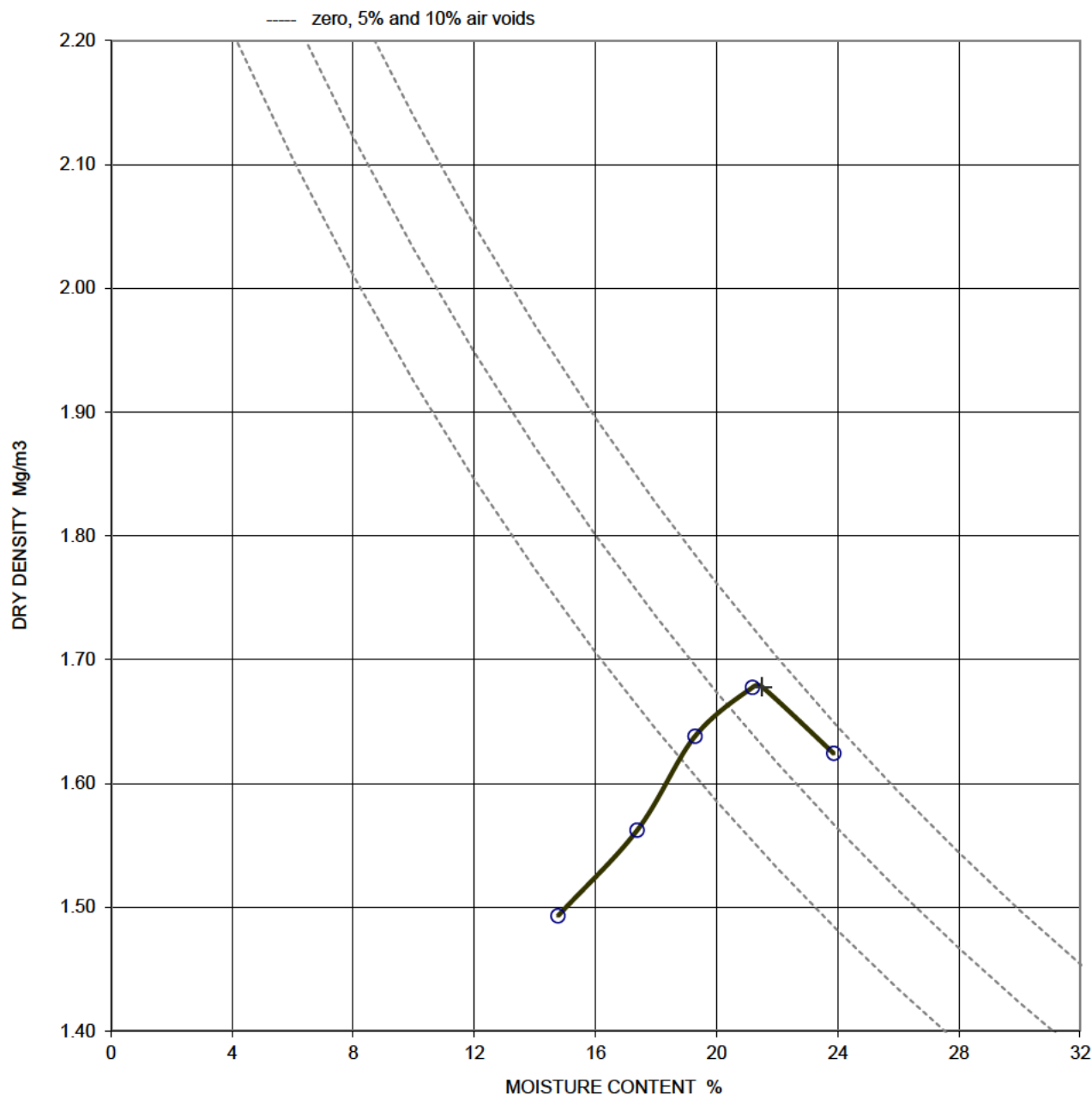
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DRY DENSITY / MOISTURE CONTENT RELATIONSHIP
BS1377 : PART 4 : 1990 : LIGHT COMPACTION, 2.5 kg rammer

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-16
	A9031-1920191219022338	Sample Depth (m BGL)	7.50 - 8.00
		Sample Type and No	B23
		Specimen Ref	



Soil description Brownish red mottled grey slightly sandy CLAY.

Test method BS 1377:part 4:1990: clause 3.5, 2.5 kg rammer in a 1 litre mould

Preparation Original material was natural, single sample tested

Material > 37.5mm 0 %

Material < 37.5mm > 20mm 0 %

Particle density 2.72 assumed

Remarks

Derived Parameters +

Maximum dry density, Mg/m³
1.68

Optimum moisture content, %
22

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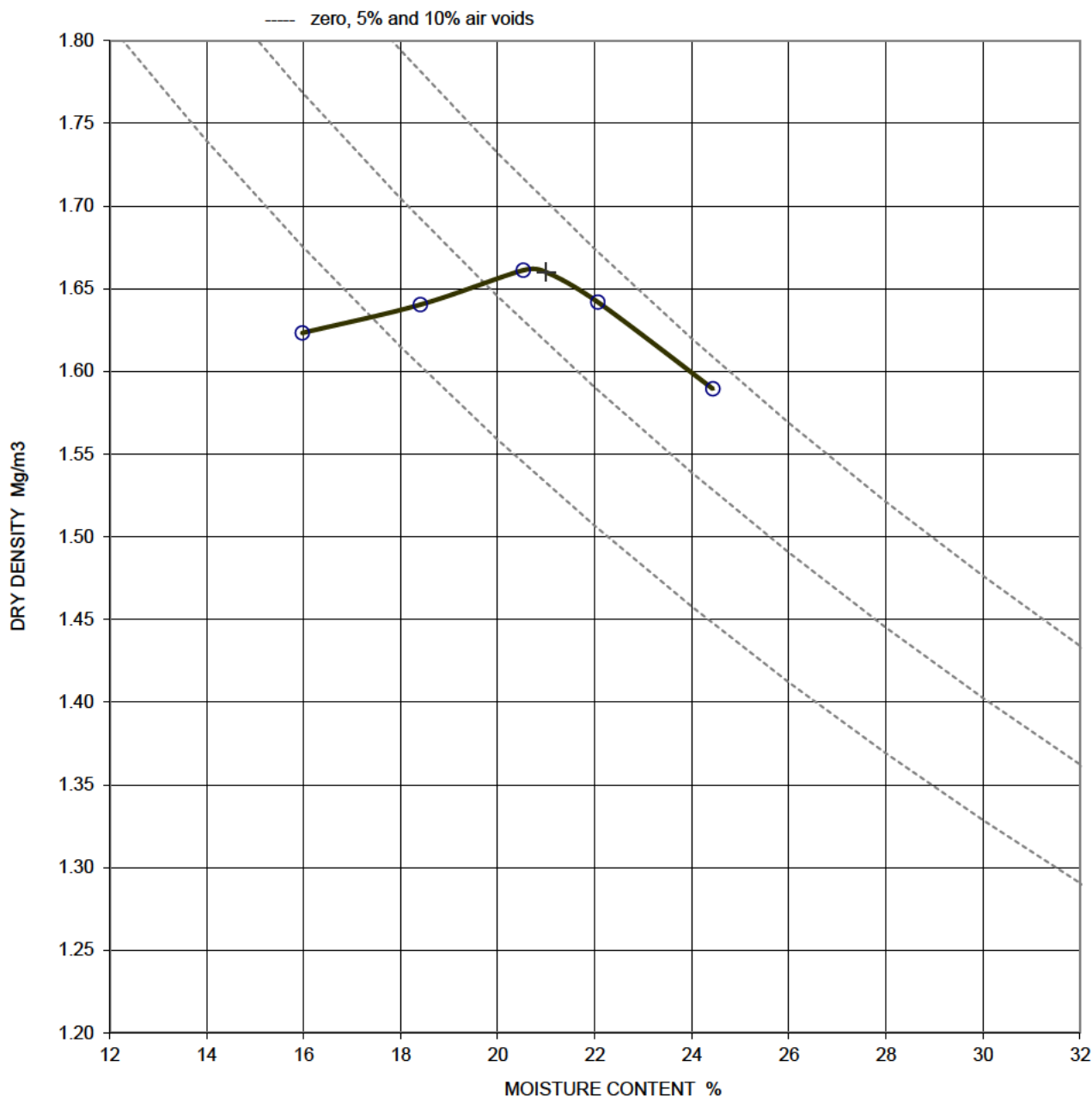
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DRY DENSITY / MOISTURE CONTENT RELATIONSHIP
BS1377 : PART 4 : 1990 : LIGHT COMPACTION, 2.5 kg rammer

Sample Details:	SAMPLE ID:	Hole No	ATK-TP-01
	A9031-1920191114114530	Sample Depth (m BGL)	0.50 - 0.60
		Sample Type and No	B4
		Specimen Ref	



Soil description Brown slightly sandy CLAY.

Test method BS 1377:part 4:1990: clause 3.5, 2.5 kg rammer in a 1 litre mould
 Preparation Original material was natural, single sample tested
 Material > 37.5mm 0 %
 Material < 37.5mm > 20mm 0 %
 Particle density 2.65 assumed
 Remarks

Derived Parameters +

Maximum dry density, Mg/m3
1.66
 Optimum moisture content, %
21

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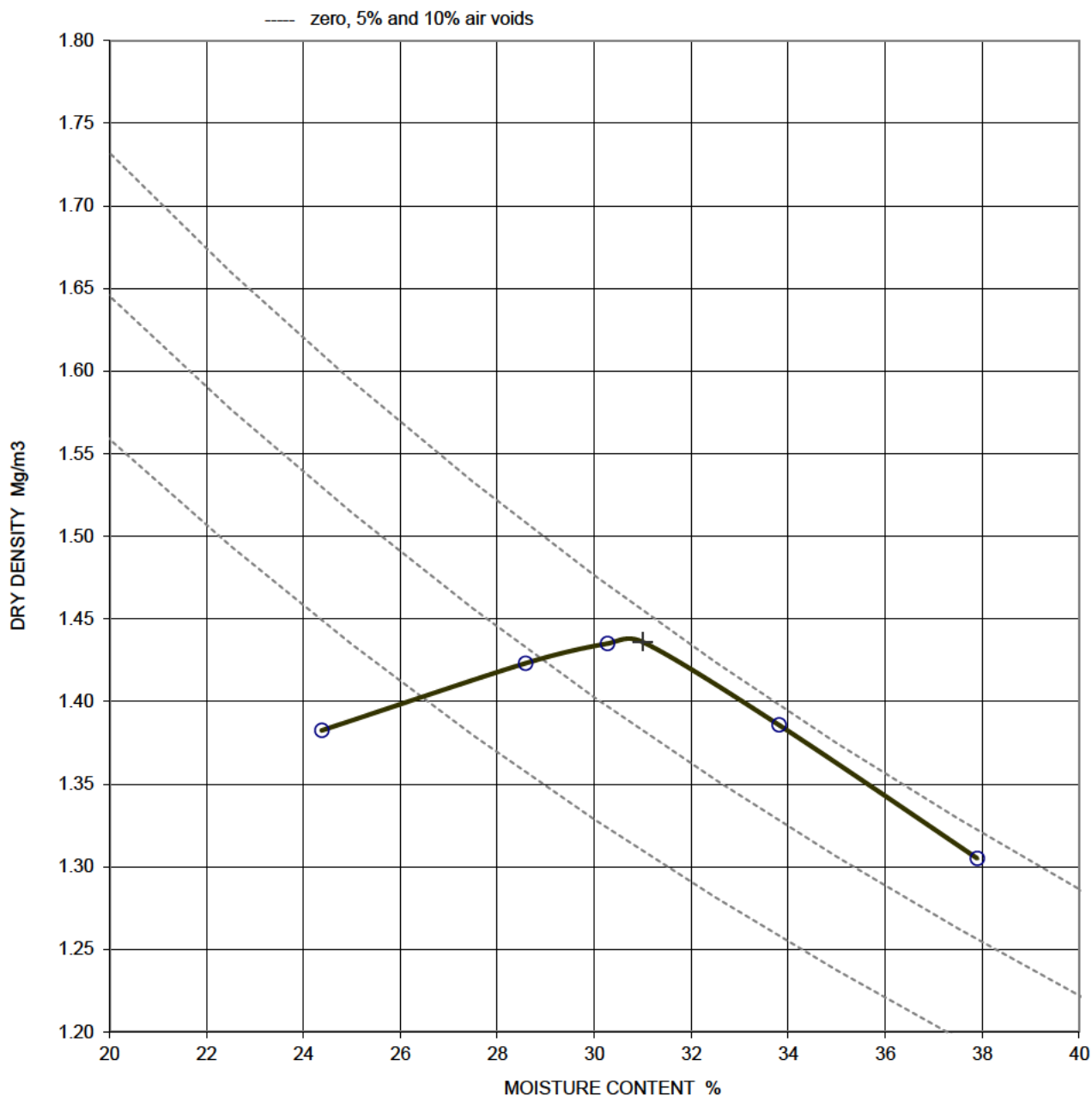
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DRY DENSITY / MOISTURE CONTENT RELATIONSHIP
BS1377 : PART 4 : 1990 : LIGHT COMPACTION, 2.5 kg rammer

Sample Details:	SAMPLE ID:	Hole No	ATK-TP-01
	A9031-1920191114114711	Sample Depth (m BGL)	2.80 - 2.90
		Sample Type and No	B12
		Specimen Ref	



Soil description Brown slightly sandy CLAY.

Test method BS 1377:part 4:1990: clause 3.5, 2.5 kg rammer in a 1 litre mould

Preparation Original material was natural, single sample tested

Material > 37.5mm 0 %

Material < 37.5mm > 20mm 0 %

Particle density 2.65 assumed

Remarks

Derived Parameters +

Maximum dry density, Mg/m³

1.44

Optimum moisture content, %

31

QA Ref
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Project No A9031-19
Project Name HAVANT THICKET WATER STORAGE

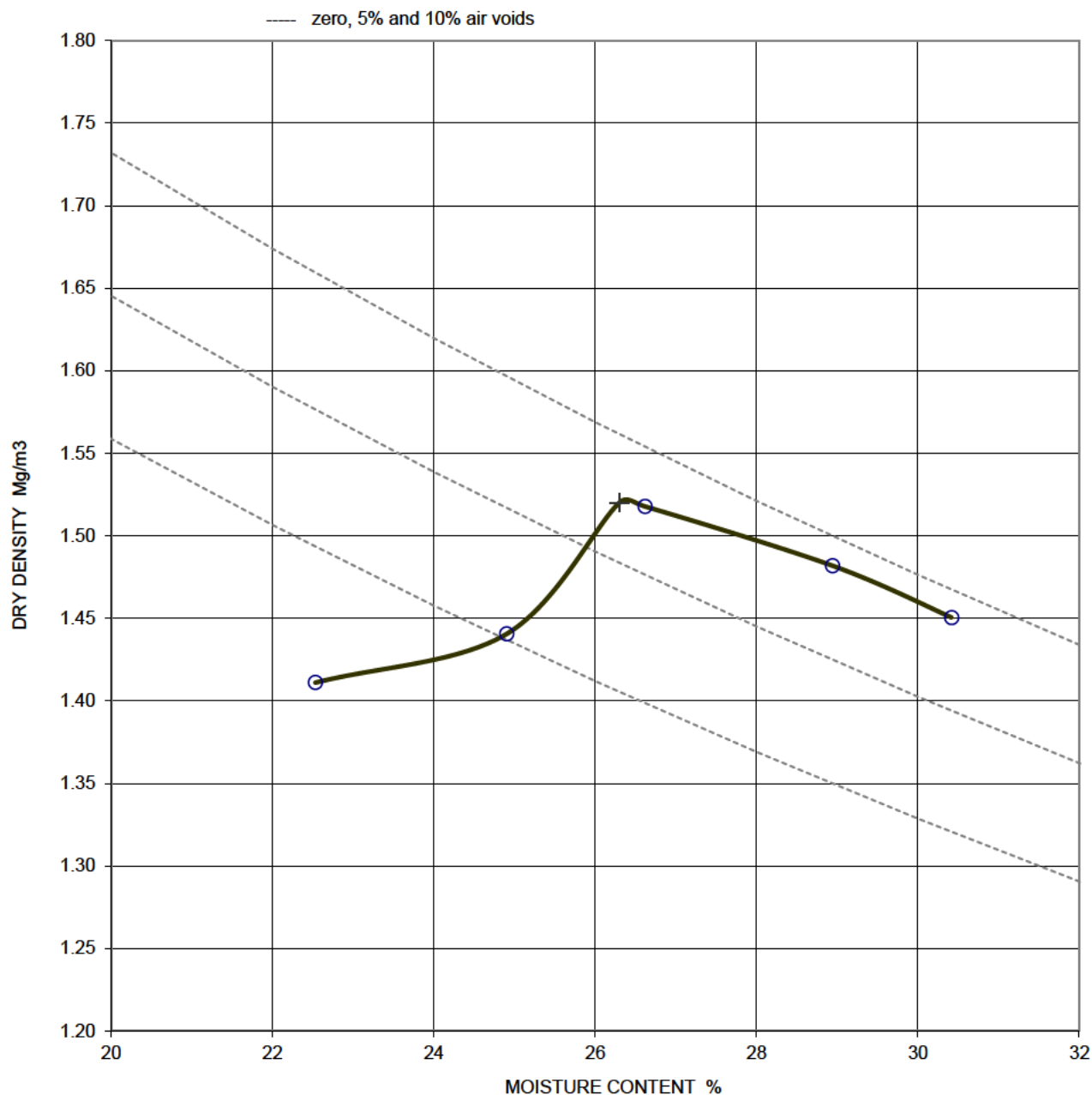
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DRY DENSITY / MOISTURE CONTENT RELATIONSHIP
BS1377 : PART 4 : 1990 : LIGHT COMPACTION, 2.5 kg rammer

Sample Details:	SAMPLE ID:	Hole No	ATK-TP-01
	A9031-1920191114114717	Sample Depth (m BGL)	3.00 - 3.10
		Sample Type and No	B14
		Specimen Ref	



Soil description Brown slightly sandy CLAY.

Test method BS 1377:part 4:1990: clause 3.5, 2.5 kg rammer in a 1 litre mould

Preparation Original material was natural, single sample tested

Material > 37.5mm 0 %

Material < 37.5mm > 20mm 0 %

Particle density 2.65 assumed

Remarks

Derived Parameters +

Maximum dry density, Mg/m³
1.52

Optimum moisture content, %
26

QA Ref
SLD 4, 3.3/4
Rev 2.5
Sep 17



Project No A9031-19
Project Name HAVANT THICKET WATER STORAGE

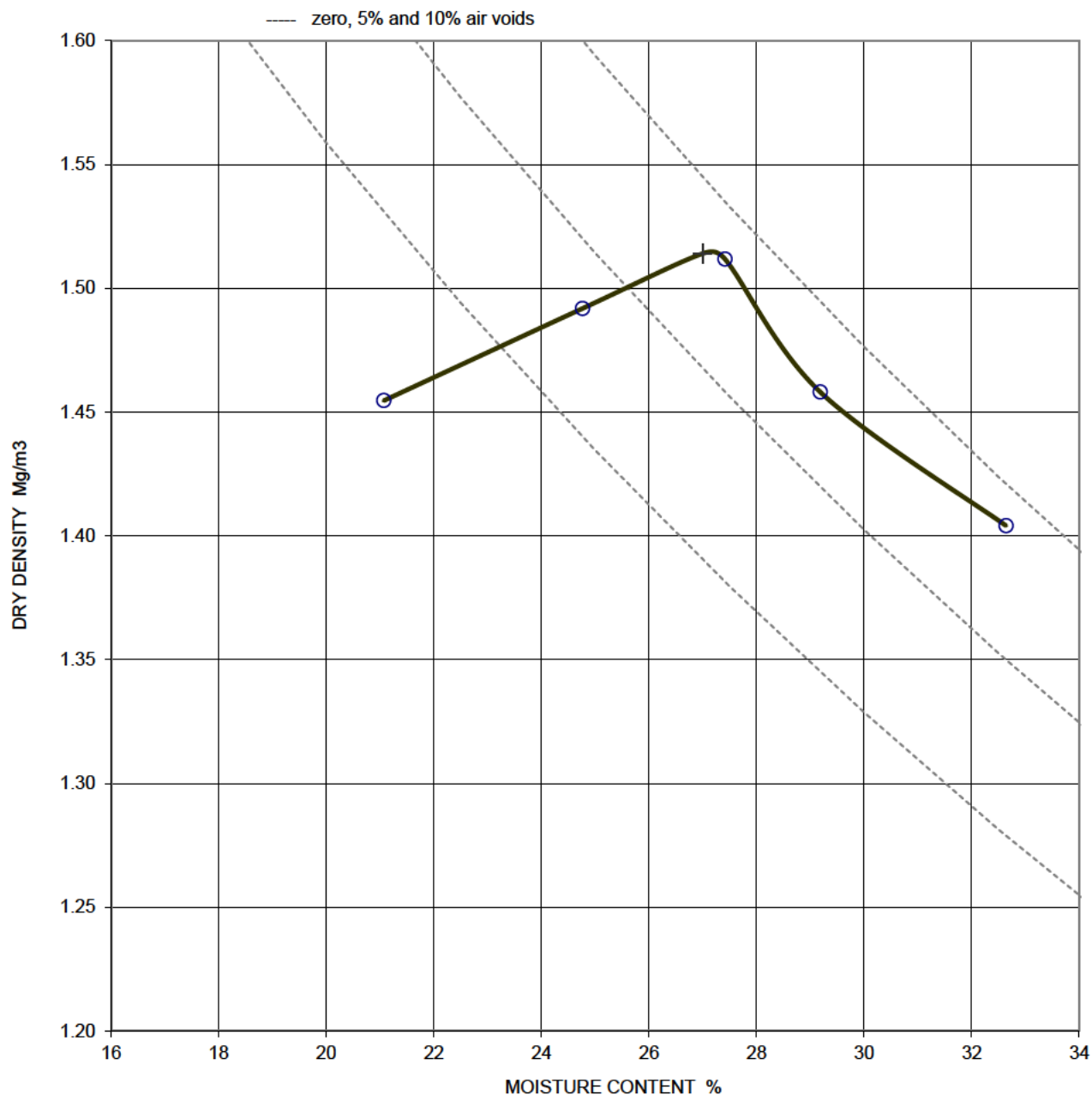
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DRY DENSITY / MOISTURE CONTENT RELATIONSHIP
BS1377 : PART 4 : 1990 : LIGHT COMPACTION, 2.5 kg rammer

Sample Details:	SAMPLE ID:	Hole No	ATK-TP-02
	A9031-1920191113101617	Sample Depth (m BGL)	1.30 - 1.40
		Sample Type and No	B6
		Specimen Ref	



Soil description Brown slightly sandy slightly gravelly CLAY.

Test method BS 1377:part 4:1990: clause 3.5, 2.5 kg rammer in a 1 litre mould

Preparation Original material was natural, single sample tested

Material > 37.5mm 0 %

Material < 37.5mm > 20mm 0 %

Particle density 2.65 assumed

Remarks

Derived Parameters +

Maximum dry density, Mg/m³

1.51

Optimum moisture content, %

27

QA Ref
SLD 4, 3.3/4
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Sep 17



Project No A9031-19

Project Name HAVANT THICKET WATER STORAGE

Figure

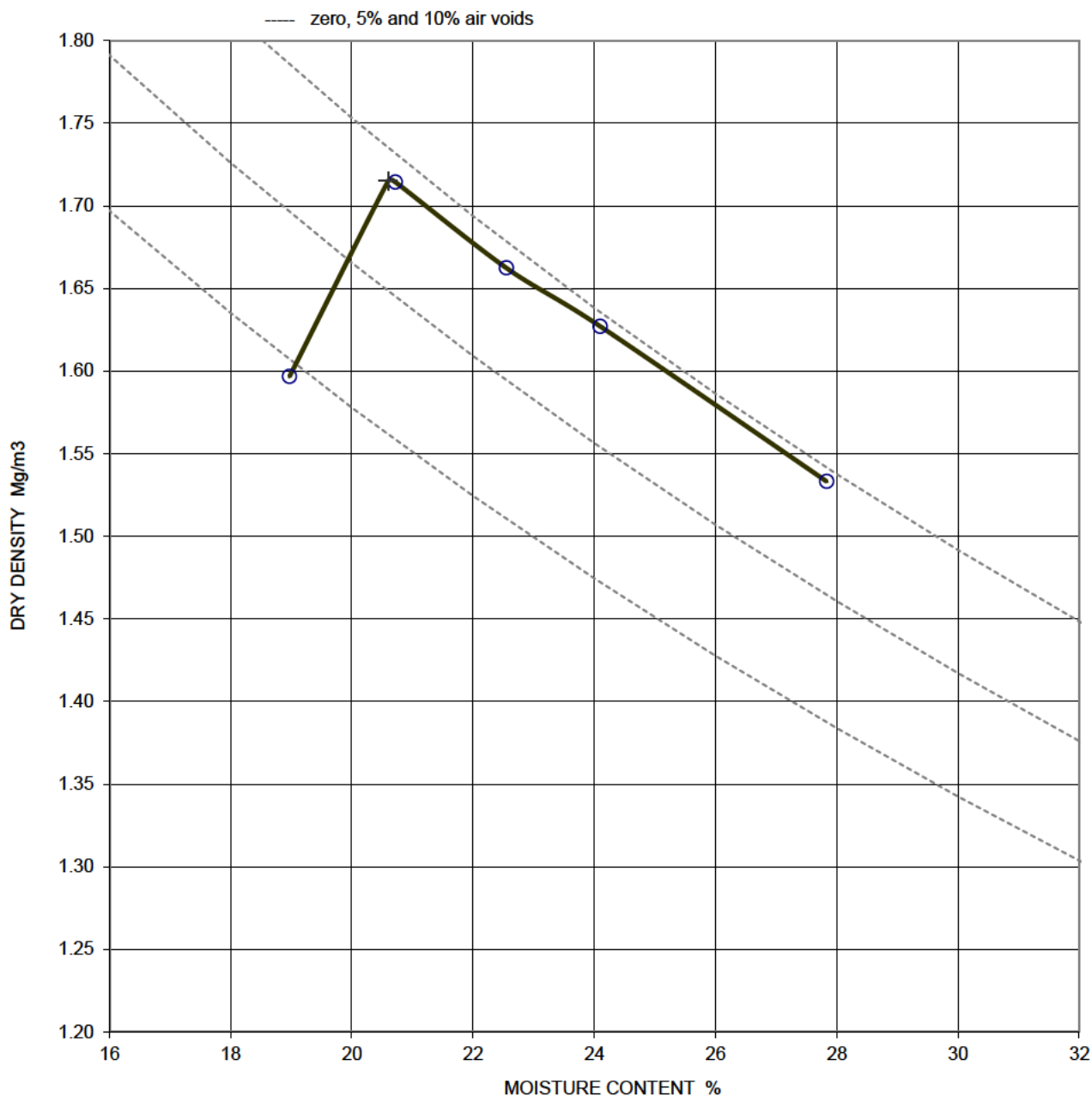
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DRY DENSITY / MOISTURE CONTENT RELATIONSHIP
BS1377 : PART 4 : 1990 : LIGHT COMPACTION, 2.5 kg rammer

Sample Details:	SAMPLE ID:	Hole No	ATK-TP-02
	A9031-1920191113101637	Sample Depth (m BGL)	2.20 - 2.40
		Sample Type and No	B8
		Specimen Ref	



Soil description Brown slightly sandy slightly gravelly CLAY.

Test method BS 1377:part 4:1990: clause 3.5, 2.5 kg rammer in a 1 litre mould
 Preparation Original material was natural, single sample tested
 Material > 37.5mm 0 %
 Material < 37.5mm > 20mm 0 %
 Particle density 2.70 assumed
 Remarks

Derived Parameters +

Maximum dry density, Mg/m³
1.72
 Optimum moisture content, %
21

QA Ref
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 Rev 2.5
 Sep 17



Project No A9031-19
 Project Name HAVANT THICKET WATER STORAGE

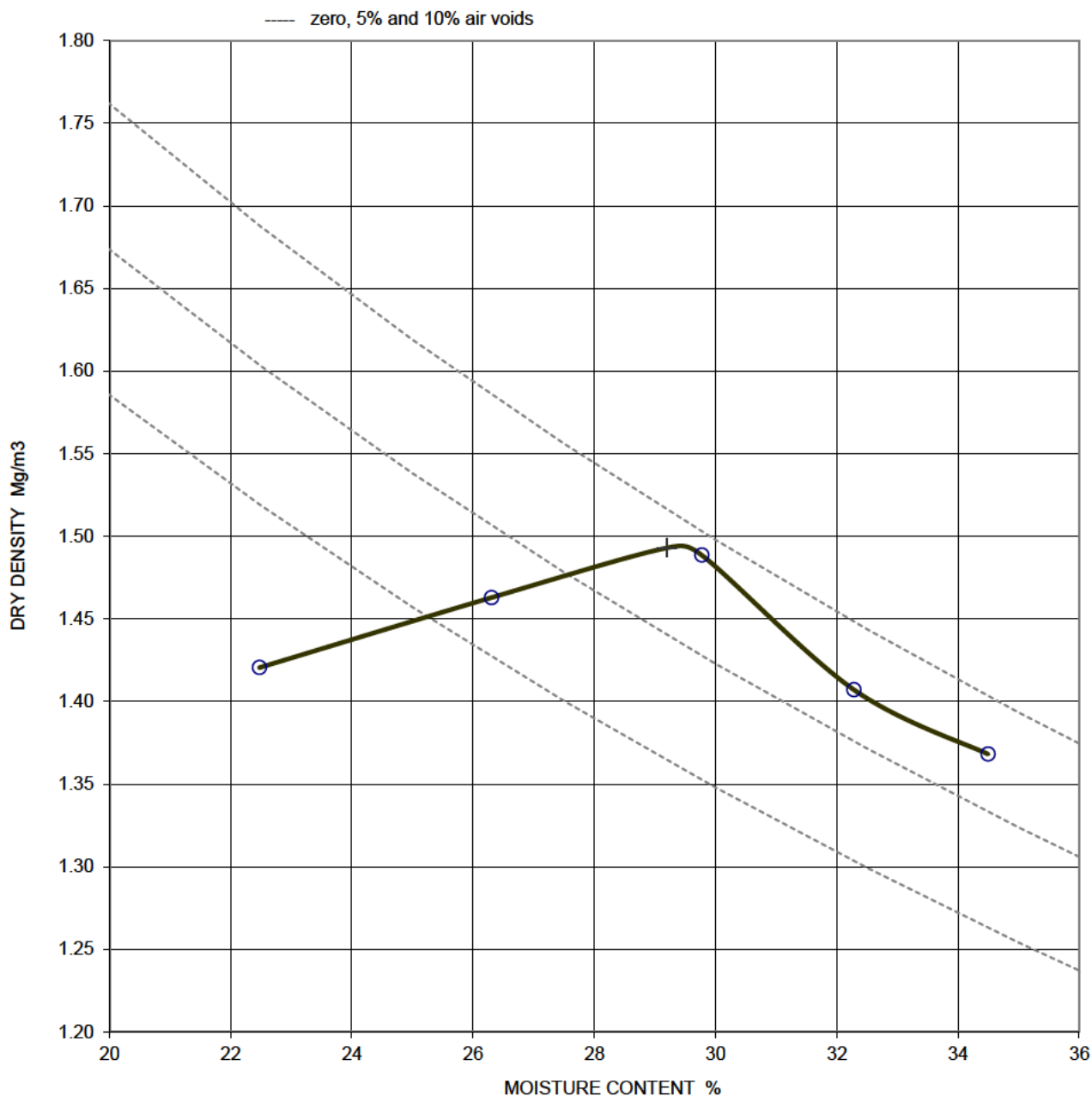
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DRY DENSITY / MOISTURE CONTENT RELATIONSHIP
BS1377 : PART 4 : 1990 : LIGHT COMPACTION, 2.5 kg rammer

Sample Details:	SAMPLE ID:	Hole No	ATK-TP-03
	A9031-1920191115080853	Sample Depth (m BGL)	1.60 - 1.70
		Sample Type and No	B9
		Specimen Ref	



Soil description Brown slightly sandy slightly gravelly CLAY.

Test method BS 1377:part 4:1990: clause 3.5, 2.5 kg rammer in a 1 litre mould

Preparation Original material was natural, single sample tested

Material > 37.5mm 0 %

Material < 37.5mm > 20mm 0 %

Particle density 2.72 assumed

Remarks

Derived Parameters +

Maximum dry density, Mg/m³
1.49

Optimum moisture content, %
29

QA Ref
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Project No A9031-19
Project Name HAVANT THICKET WATER STORAGE

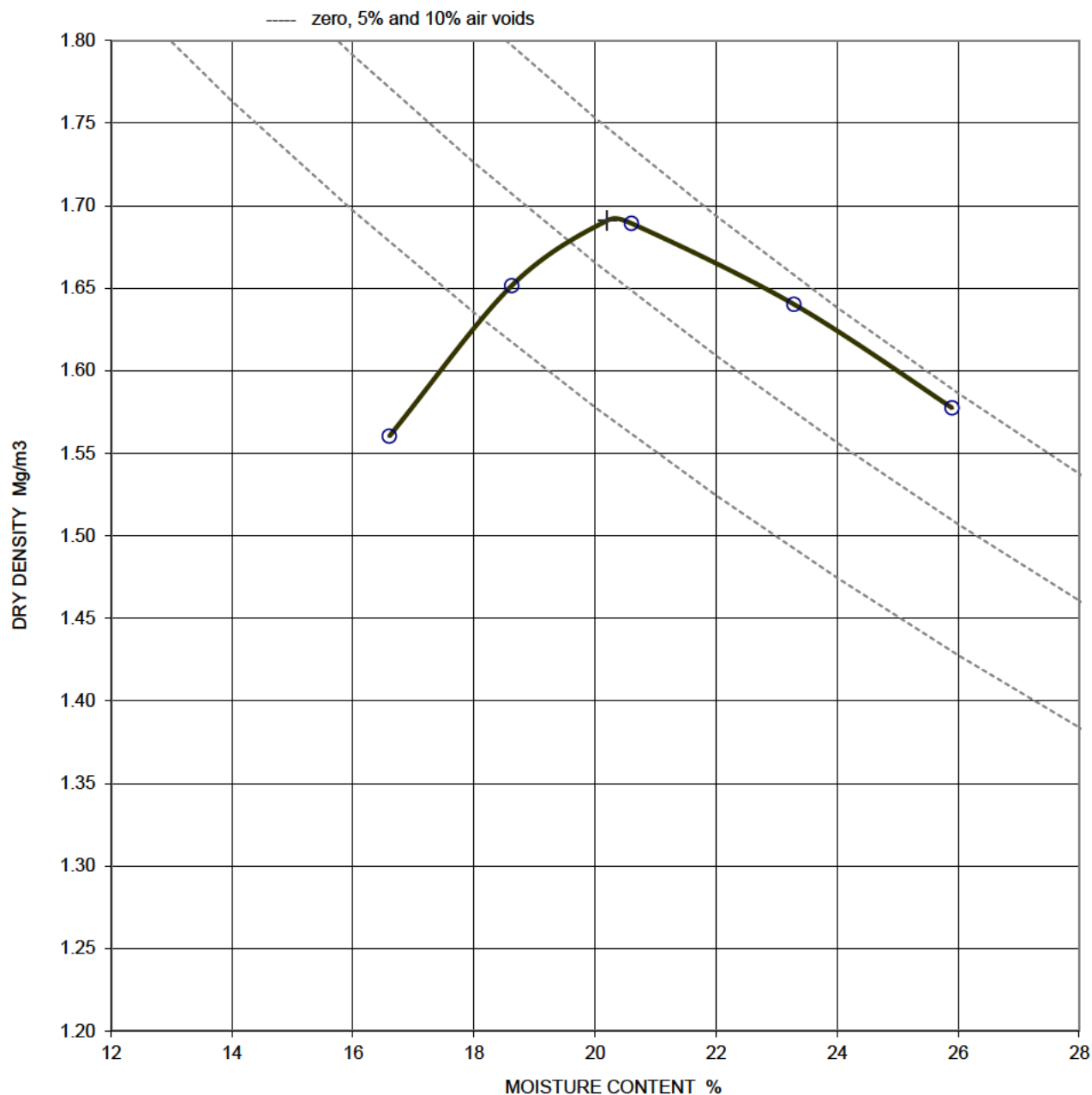
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DRY DENSITY / MOISTURE CONTENT RELATIONSHIP
BS1377 : PART 4 : 1990 : LIGHT COMPACTION, 2.5 kg rammer

Sample Details:	SAMPLE ID:	Hole No	ATK-TP-03
	A9031-1920191115080910	Sample Depth (m BGL)	3.10 - 3.20
		Sample Type and No	B13
		Specimen Ref	



Soil description Dark grey slightly sandy CLAY.

Test method BS 1377:part 4:1990: clause 3.5, 2.5 kg rammer in a 1 litre mould

Preparation Original material was natural, single sample tested

Material > 37.5mm 0 %

Material < 37.5mm > 20mm 0 %

Particle density 2.70 assumed

Remarks

Derived Parameters +

Maximum dry density, Mg/m³
1.69

Optimum moisture content, %
20

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SLD 4, 3.3/4
Rev 2.5
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Project Name HAVANT THICKET WATER STORAGE

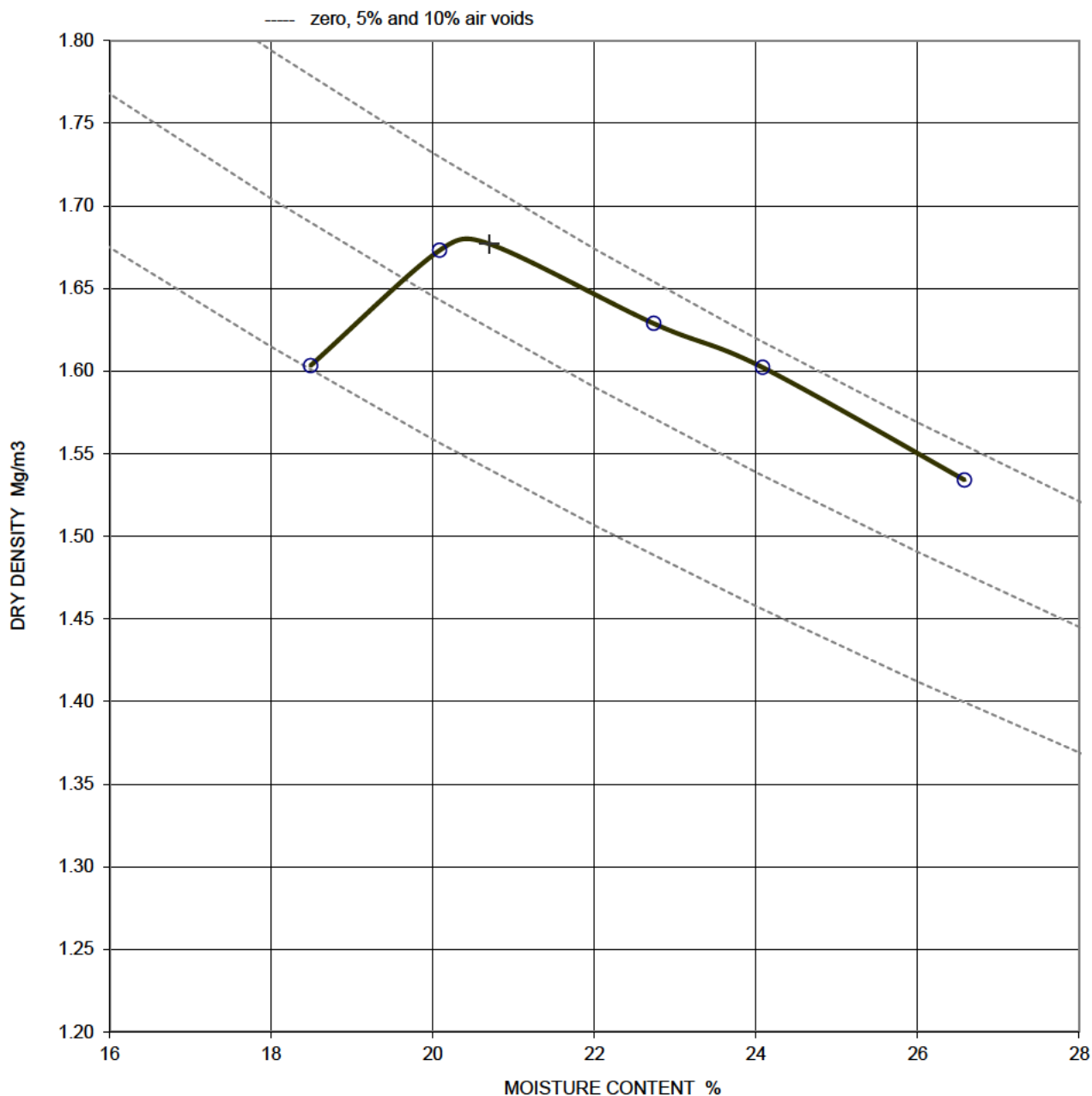
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DRY DENSITY / MOISTURE CONTENT RELATIONSHIP
BS1377 : PART 4 : 1990 : LIGHT COMPACTION, 2.5 kg rammer

Sample Details:	SAMPLE ID:	Hole No	ATK-TP-04
	A9031-1920191127041409	Sample Depth (m BGL)	1.00 - 1.20
		Sample Type and No	B5
		Specimen Ref	



Soil description Brown slightly sandy CLAY.

Test method BS 1377:part 4:1990: clause 3.5, 2.5 kg rammer in a 1 litre mould

Preparation Original material was natural, single sample tested

Material > 37.5mm 0 %

Material < 37.5mm > 20mm 0 %

Particle density 2.65 assumed

Remarks

Derived Parameters +

Maximum dry density, Mg/m³

1.68

Optimum moisture content, %

21

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Project Name HAVANT THICKET WATER STORAGE

Figure

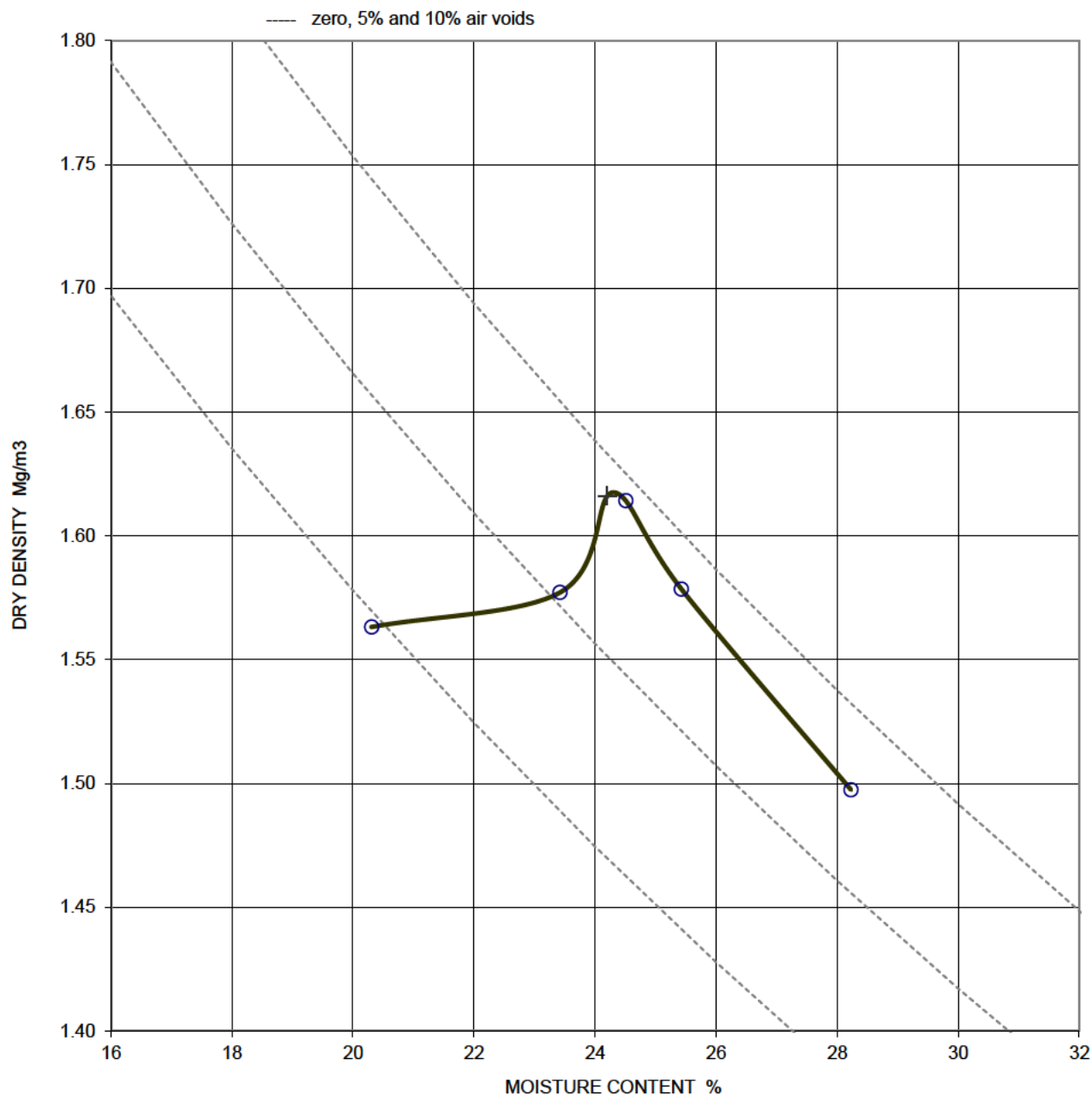
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DRY DENSITY / MOISTURE CONTENT RELATIONSHIP
BS1377 : PART 4 : 1990 : LIGHT COMPACTION, 2.5 kg rammer

Sample Details:	SAMPLE ID:	Hole No	ATK-TP-04
	A9031-1920191127041449	Sample Depth (m BGL)	1.80 - 2.00
		Sample Type and No	B10
		Specimen Ref	



Soil description Brown slightly sandy slightly gravelly CLAY.

Test method BS 1377:part 4:1990: clause 3.5, 2.5 kg rammer in a 1 litre mould
 Preparation Original material was natural, single sample tested
 Material > 37.5mm 0 %
 Material < 37.5mm > 20mm 0 %
 Particle density 2.70 assumed
 Remarks

Derived Parameters +

Maximum dry density, Mg/m³
1.62
 Optimum moisture content, %
24

QA Ref
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 Project Name HAVANT THICKET WATER STORAGE

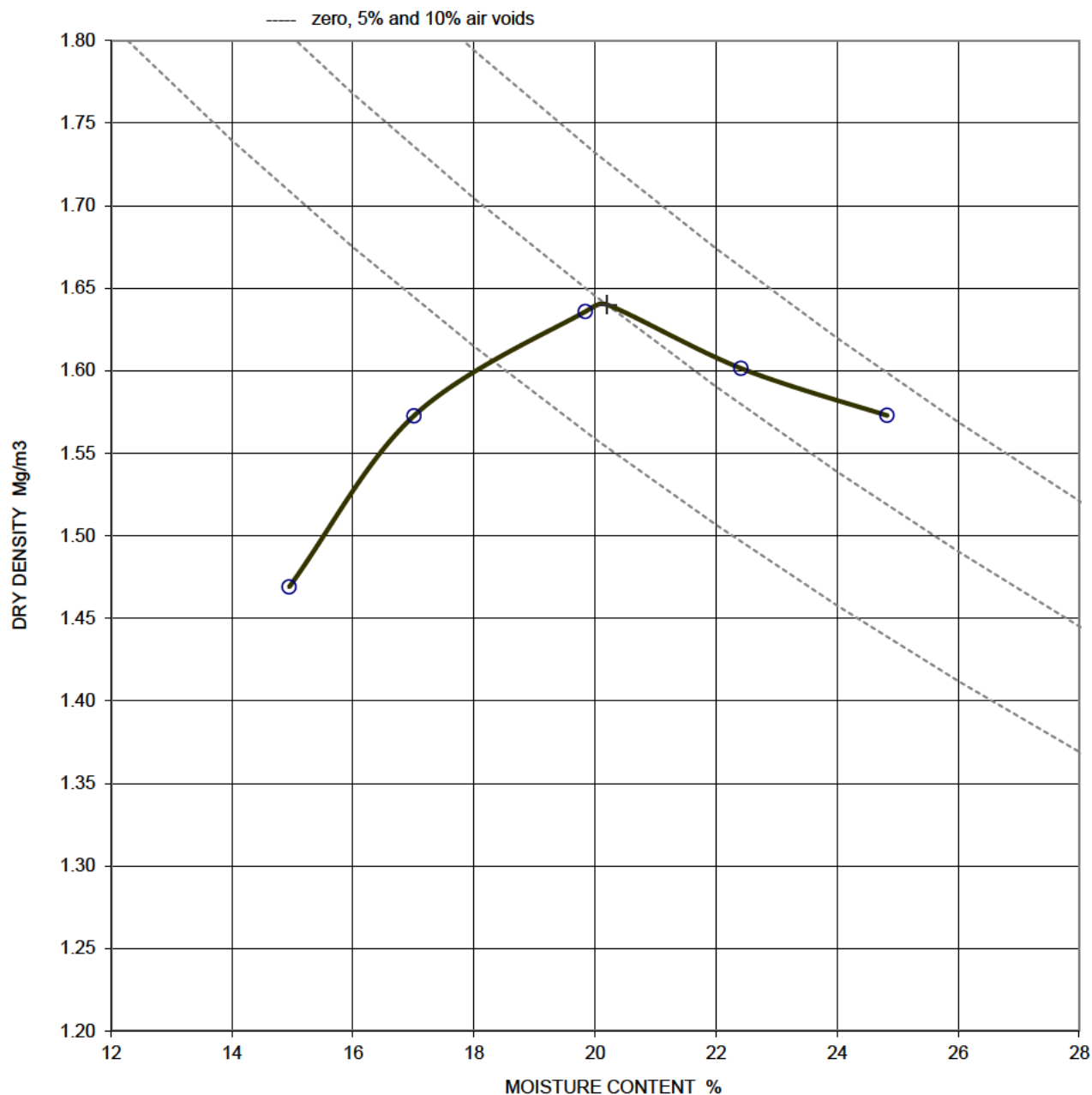
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DRY DENSITY / MOISTURE CONTENT RELATIONSHIP
BS1377 : PART 4 : 1990 : LIGHT COMPACTION, 2.5 kg rammer

Sample Details:	SAMPLE ID:	Hole No	ATK-TP-04
	A9031-1920191127041518	Sample Depth (m BGL)	3.00 - 3.10
		Sample Type and No	B12
		Specimen Ref	



Soil description Reddish brown mottled grey slightly sandy CLAY.

Test method BS 1377:part 4:1990: clause 3.5, 2.5 kg rammer in a 1 litre mould

Preparation Original material was natural, single sample tested

Material > 37.5mm 0 %

Material < 37.5mm > 20mm 0 %

Particle density 2.65 assumed

Remarks

Derived Parameters +

Maximum dry density, Mg/m³
1.64

Optimum moisture content, %
20

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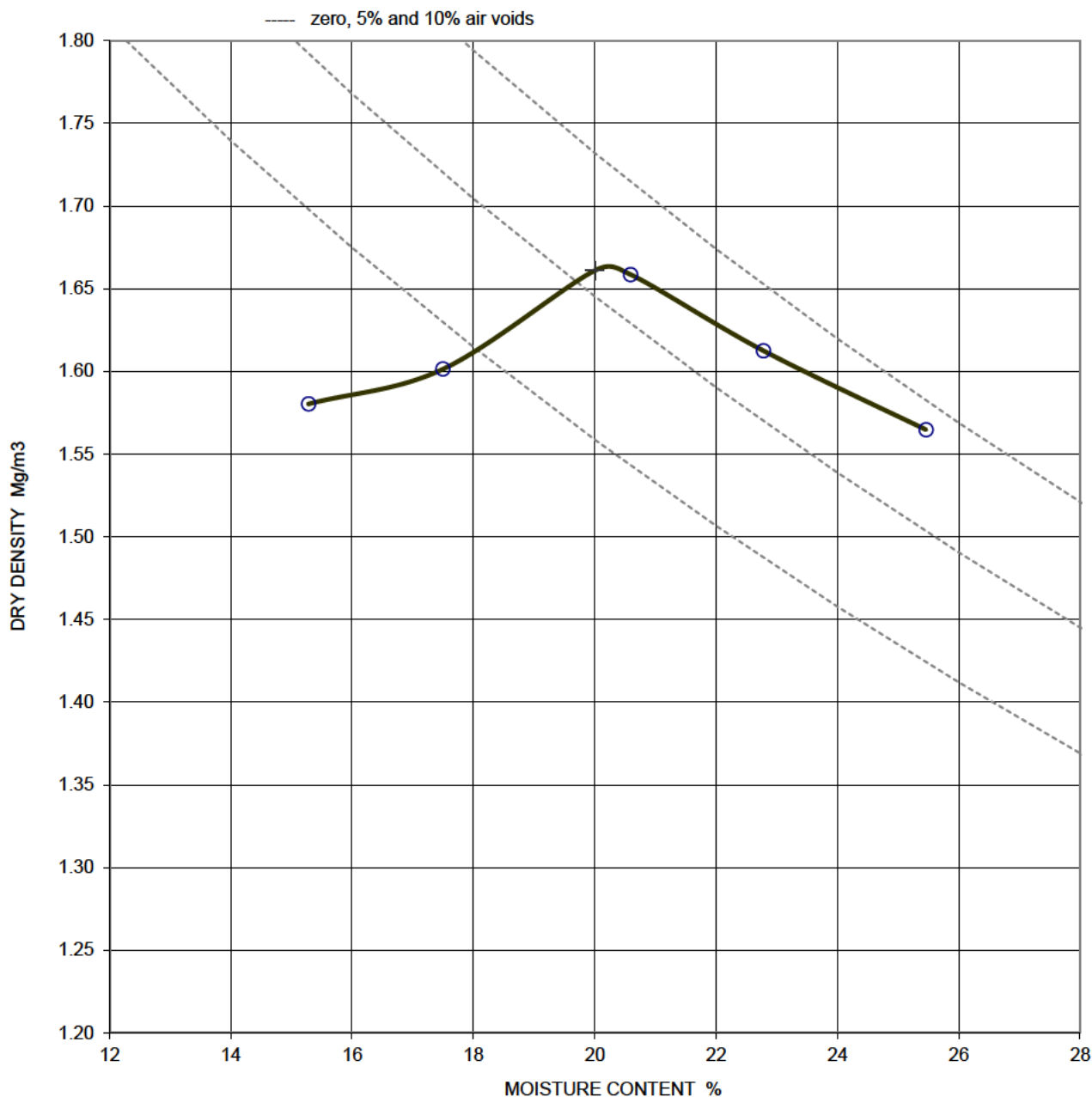
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DRY DENSITY / MOISTURE CONTENT RELATIONSHIP
BS1377 : PART 4 : 1990 : LIGHT COMPACTION, 2.5 kg rammer

Sample Details:	SAMPLE ID:	Hole No	ATK-TP-05
	A9031-1920191127042148	Sample Depth (m BGL)	0.40 - 0.50
		Sample Type and No	B3
		Specimen Ref	



Soil description Brown slightly gravelly sandy CLAY.

Test method BS 1377:part 4:1990: clause 3.5, 2.5 kg rammer in a 1 litre mould
 Preparation Original material was natural, single sample tested
 Material > 37.5mm 0 %
 Material < 37.5mm > 20mm 3 %
 Particle density 2.65 assumed
 Remarks

Derived Parameters +

Maximum dry density, Mg/m³
1.66
 Optimum moisture content, %
20

QA Ref
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 Project Name HAVANT THICKET WATER STORAGE

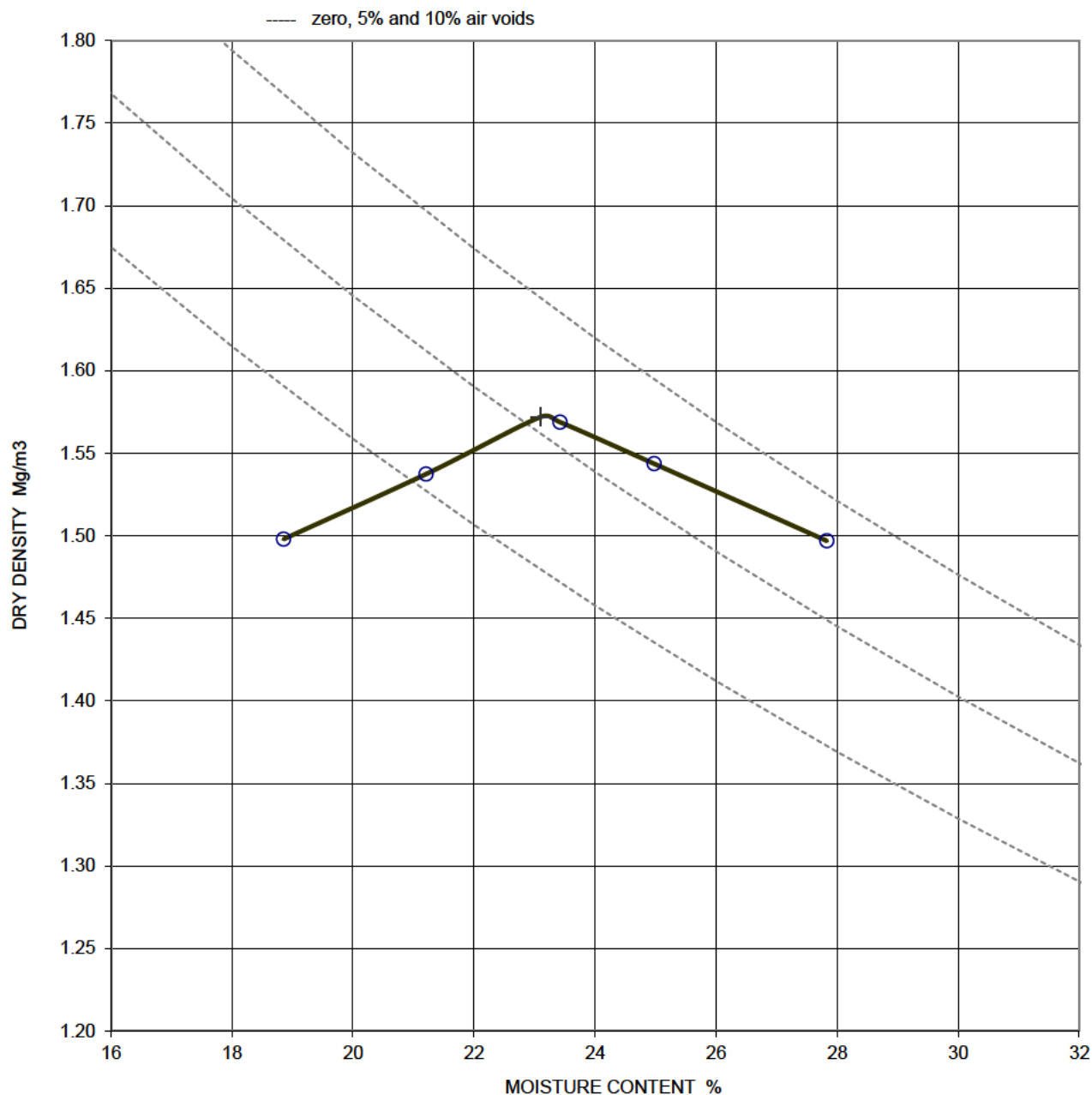
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DRY DENSITY / MOISTURE CONTENT RELATIONSHIP
BS1377 : PART 4 : 1990 : LIGHT COMPACTION, 2.5 kg rammer

Sample Details:	SAMPLE ID:	Hole No	ATK-TP-05
	A9031-1920191127042207	Sample Depth (m BGL)	0.90 - 1.00
		Sample Type and No	B6
		Specimen Ref	



Soil description Brown very sandy silty CLAY.

Test method BS 1377:part 4:1990: clause 3.5, 2.5 kg rammer in a 1 litre mould

Preparation Original material was natural, single sample tested

Material > 37.5mm 0 %

Material < 37.5mm > 20mm 0 %

Particle density 2.65 assumed

Remarks

Derived Parameters +

Maximum dry density, Mg/m³

1.57

Optimum moisture content, %

23

QA Ref
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Figure

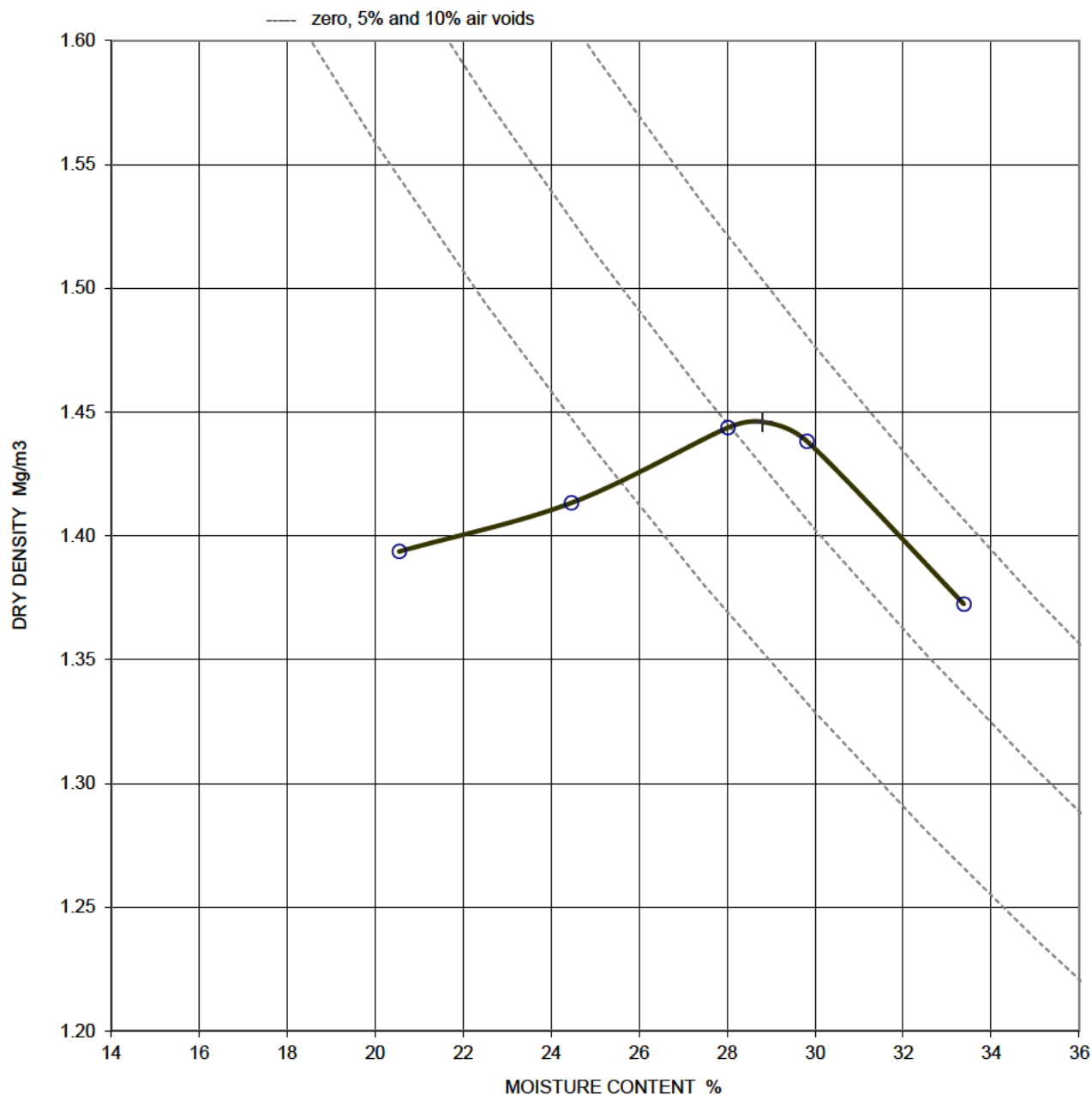
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DRY DENSITY / MOISTURE CONTENT RELATIONSHIP
BS1377 : PART 4 : 1990 : LIGHT COMPACTION, 2.5 kg rammer

Sample Details:	SAMPLE ID:	Hole No	ATK-TP-06
	A9031-1920191211040013	Sample Depth (m BGL)	0.30 - 0.80
		Sample Type and No	B4
		Specimen Ref	



Soil description Brown slightly sandy silty CLAY.

Test method BS 1377:part 4:1990: clause 3.5, 2.5 kg rammer in a 1 litre mould

Preparation Original material was natural, single sample tested

Material > 37.5mm 0 %

Material < 37.5mm > 20mm 0 %

Particle density 2.65 assumed

Remarks

Derived Parameters +

Maximum dry density, Mg/m³

1.45

Optimum moisture content, %

29

QA Ref
SLD 4, 3.3/4
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Project No A9031-19

Project Name HAVANT THICKET WATER STORAGE

Figure

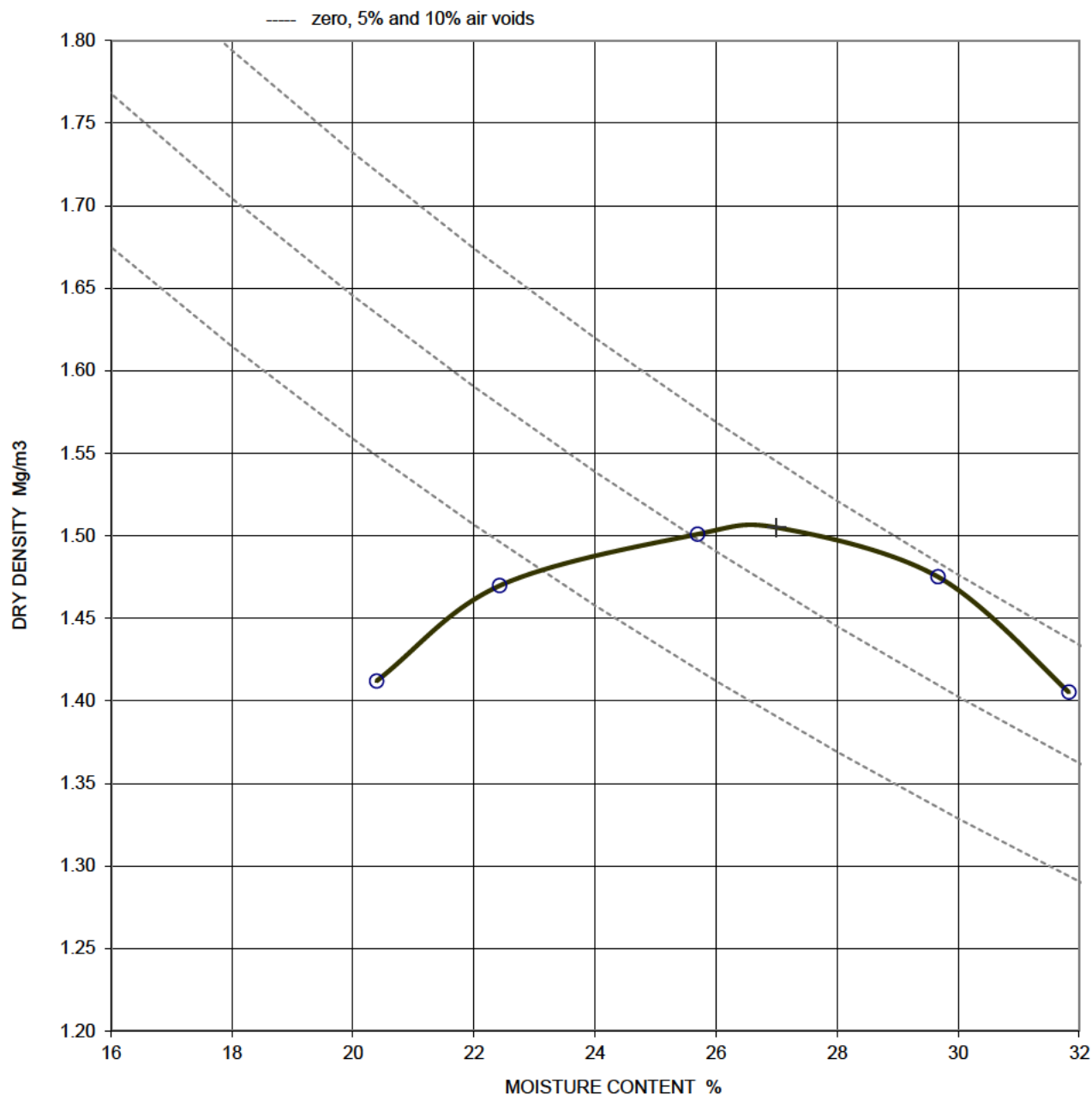
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DRY DENSITY / MOISTURE CONTENT RELATIONSHIP
BS1377 : PART 4 : 1990 : LIGHT COMPACTION, 2.5 kg rammer

Sample Details:	SAMPLE ID:	Hole No	ATK-TP-06
	A9031-1920191211040141	Sample Depth (m BGL)	2.00 - 2.40
		Sample Type and No	B11
		Specimen Ref	



Soil description Brown slightly sandy CLAY.

Test method BS 1377:part 4:1990: clause 3.5, 2.5 kg rammer in a 1 litre mould

Preparation Original material was natural, single sample tested

Material > 37.5mm 0 %

Material < 37.5mm > 20mm 0 %

Particle density 2.65 assumed

Remarks

Derived Parameters +

Maximum dry density, Mg/m³
1.51

Optimum moisture content, %
27

QA Ref
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Project Name HAVANT THICKET WATER STORAGE

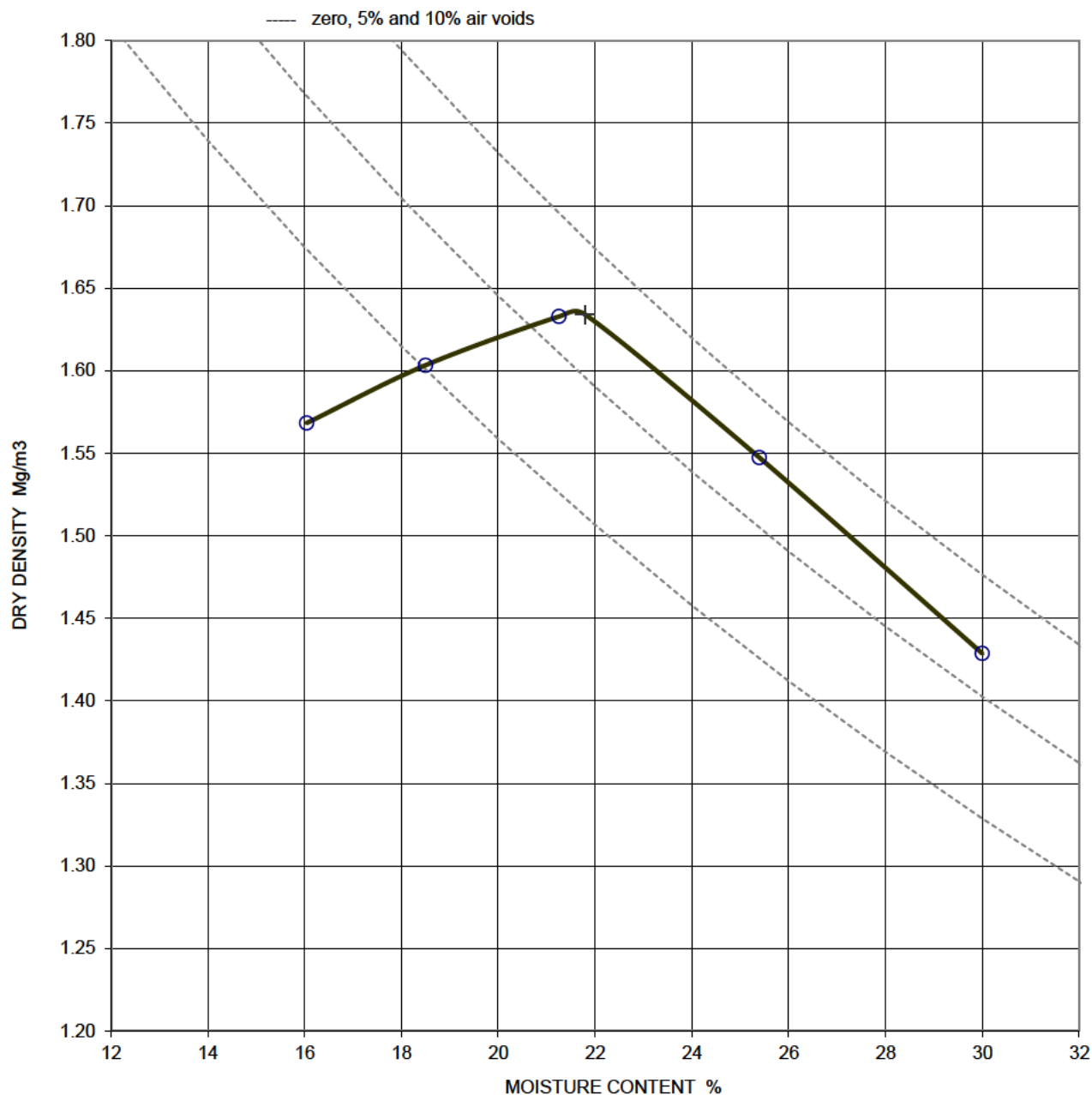
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DRY DENSITY / MOISTURE CONTENT RELATIONSHIP
BS1377 : PART 4 : 1990 : LIGHT COMPACTION, 2.5 kg rammer

Sample Details:	SAMPLE ID:	Hole No	ATK-TP-07
	A9031-1920191127042601	Sample Depth (m BGL)	1.60 - 1.70
		Sample Type and No	B9
		Specimen Ref	



Soil description Brown clayey SAND.

Test method BS 1377:part 4:1990: clause 3.5, 2.5 kg rammer in a 1 litre mould

Preparation Original material was natural, single sample tested

Material > 37.5mm 0 %

Material < 37.5mm > 20mm 0 %

Particle density 2.65 assumed

Remarks

Derived Parameters +

Maximum dry density, Mg/m³

1.63

Optimum moisture content, %

22

QA Ref
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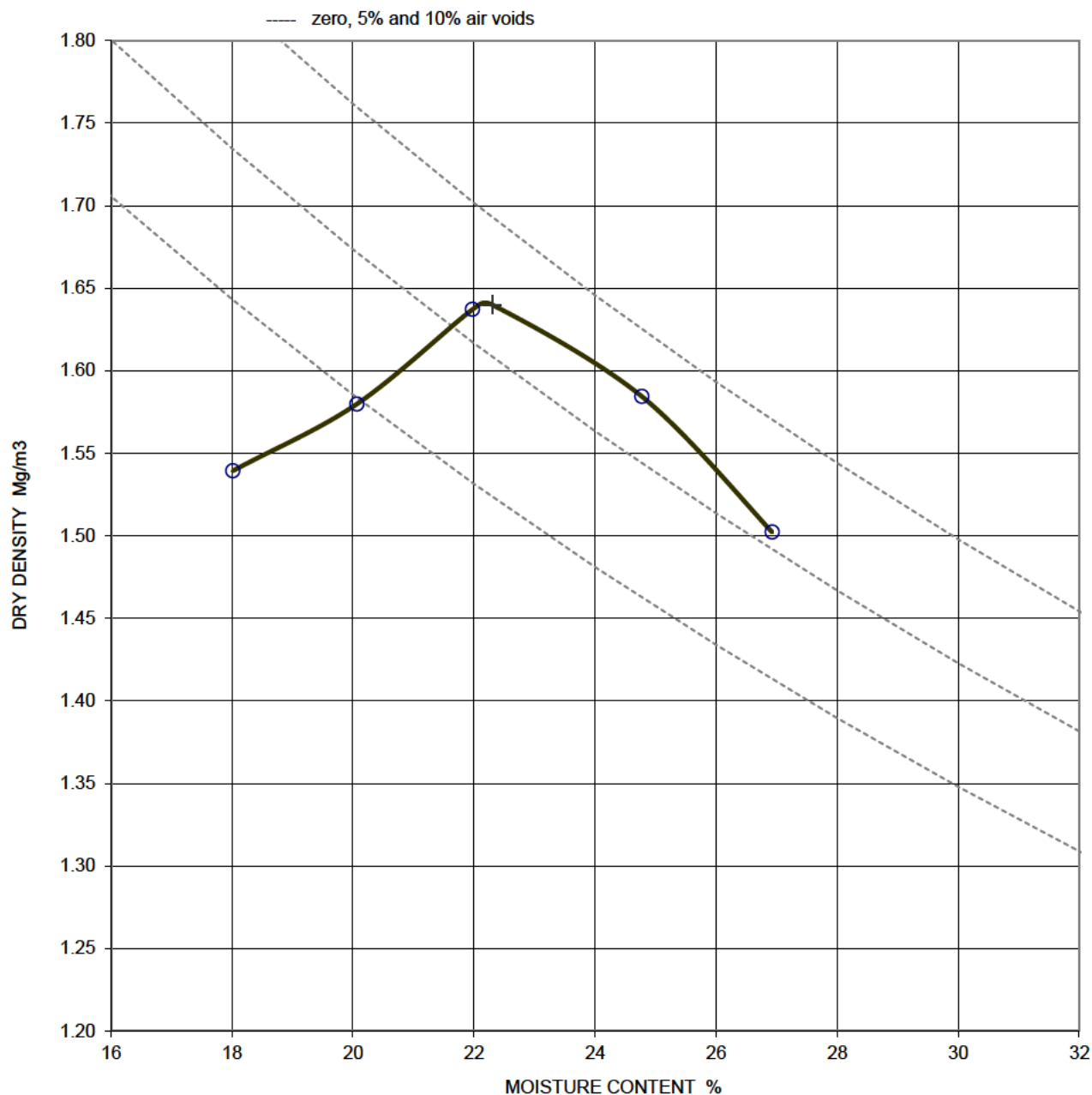
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DRY DENSITY / MOISTURE CONTENT RELATIONSHIP
BS1377 : PART 4 : 1990 : LIGHT COMPACTION, 2.5 kg rammer

Sample Details:	SAMPLE ID:	Hole No	ATK-TP-08
	A9031-1920191204021819	Sample Depth (m BGL)	0.90 - 1.00
		Sample Type and No	B8
		Specimen Ref	



Soil description Brown slightly sandy gravelly CLAY with one cobble.

Test method BS 1377:part 4:1990: clause 3.6, 2.5 kg rammer in a CBR mould

Preparation Original material was natural, single sample tested

Material > 37.5mm 5 %

Material < 37.5mm > 20mm 22 %

Particle density 2.72 assumed

Remarks

Derived Parameters +

Maximum dry density, Mg/m³
1.64

Optimum moisture content, %
22

QA Ref
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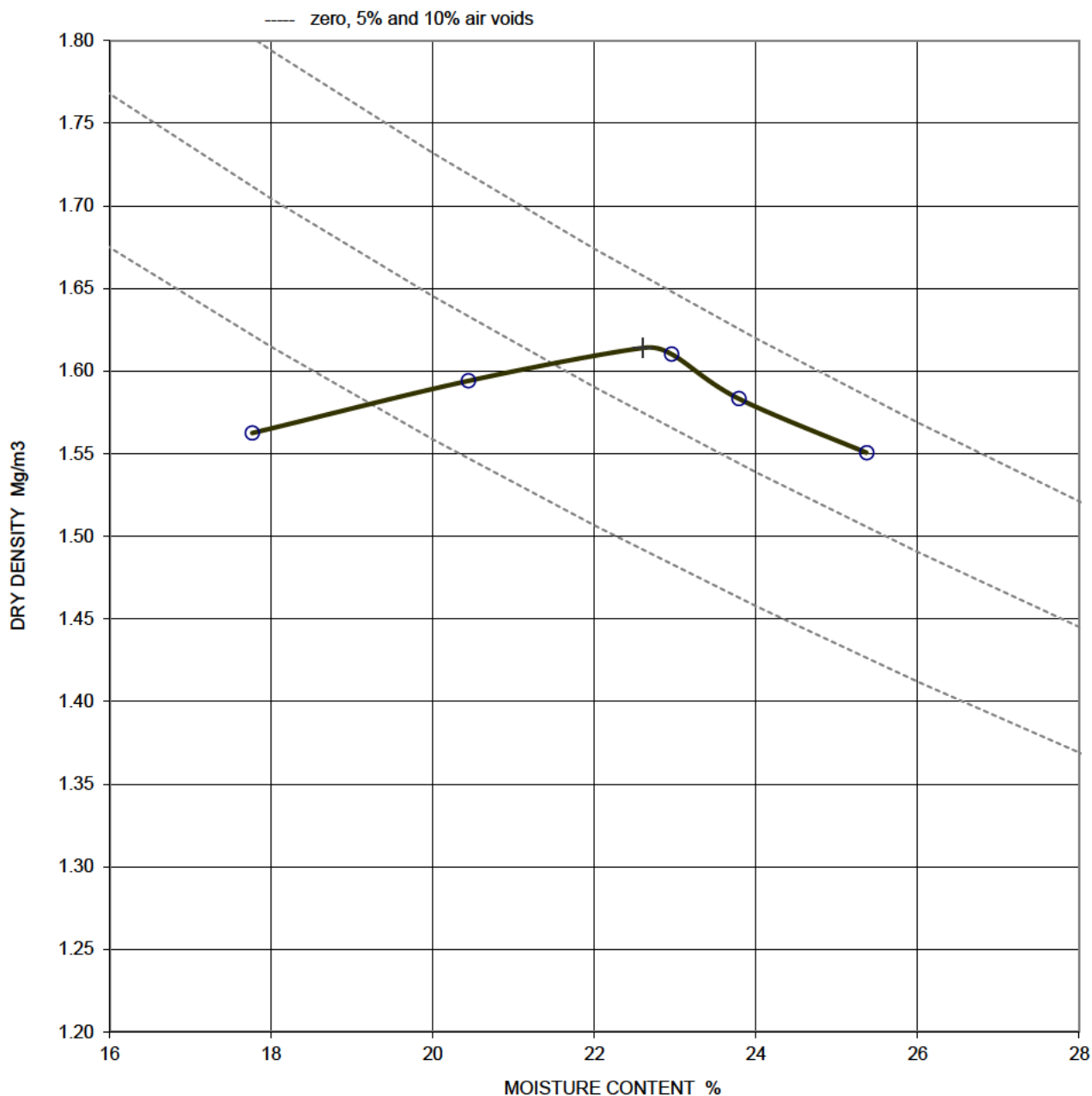
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DRY DENSITY / MOISTURE CONTENT RELATIONSHIP
BS1377 : PART 4 : 1990 : LIGHT COMPACTION, 2.5 kg rammer

Sample Details:	SAMPLE ID:	Hole No	ATK-TPM-02
	A9031-1920191204015219	Sample Depth (m BGL)	0.40 - 0.50
		Sample Type and No	B2
		Specimen Ref	



Soil description Brown slightly sandy silty CLAY.

Test method BS 1377:part 4:1990: clause 3.5, 2.5 kg rammer in a 1 litre mould
 Preparation Original material was natural, single sample tested
 Material > 37.5mm 0 %
 Material < 37.5mm > 20mm 0 %
 Particle density 2.65 assumed
 Remarks

Derived Parameters +

Maximum dry density, Mg/m³
1.61
 Optimum moisture content, %
23

QA Ref
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 Project Name HAVANT THICKET WATER STORAGE

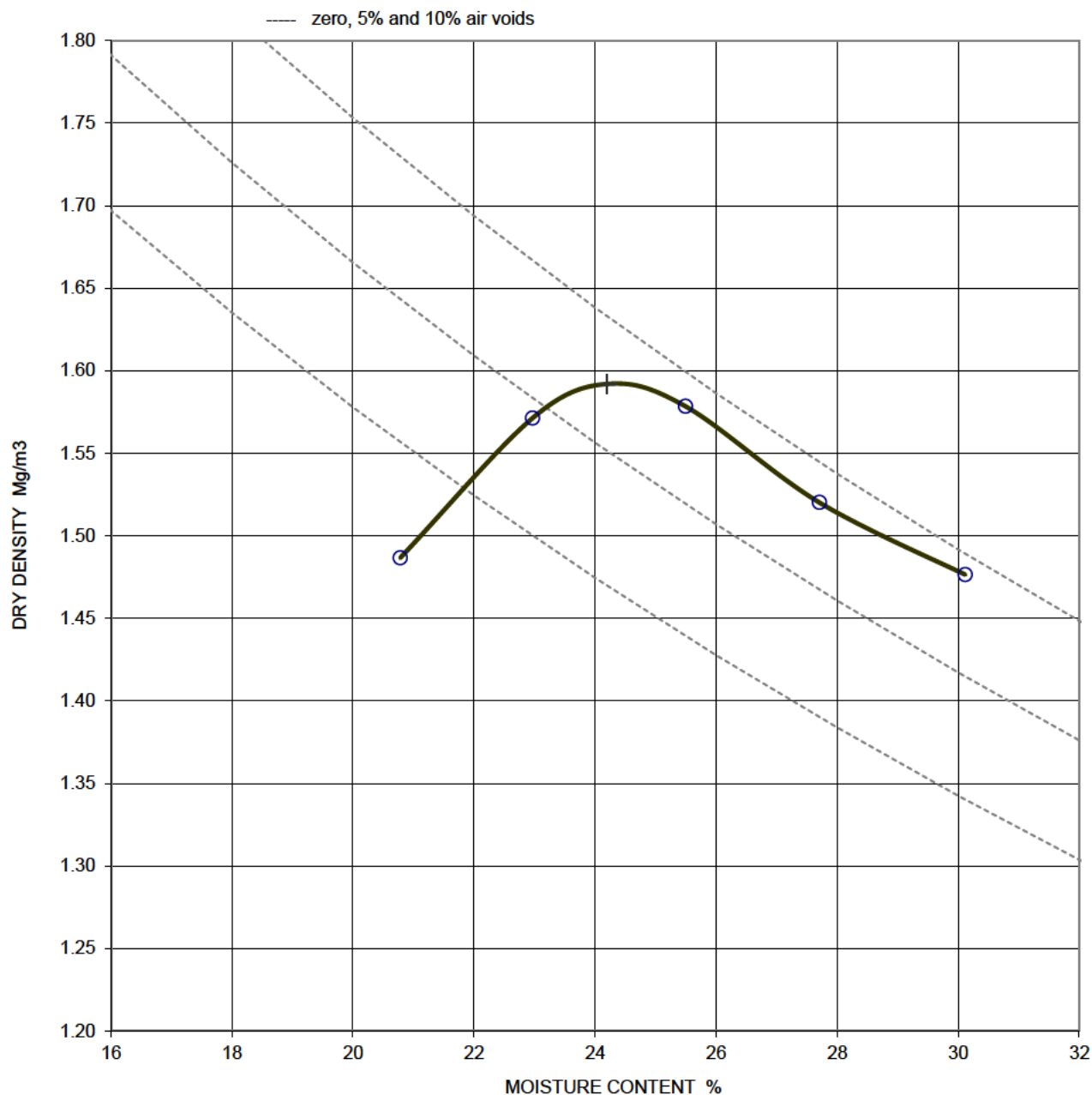
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DRY DENSITY / MOISTURE CONTENT RELATIONSHIP
BS1377 : PART 4 : 1990 : LIGHT COMPACTION, 2.5 kg rammer

Sample Details:	SAMPLE ID:	Hole No	ATK-TPM-03
	A9031-1920191204110904	Sample Depth (m BGL)	1.60 - 1.70
		Sample Type and No	B6
		Specimen Ref	



Soil description Brown slightly sandy slightly gravelly CLAY.

Test method BS 1377:part 4:1990: clause 3.5, 2.5 kg rammer in a 1 litre mould

Preparation Original material was natural, single sample tested

Material > 37.5mm 0 %

Material < 37.5mm > 20mm 0 %

Particle density 2.70 assumed

Remarks

Derived Parameters +

Maximum dry density, Mg/m³

1.59

Optimum moisture content, %

24

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Project Name HAVANT THICKET WATER STORAGE

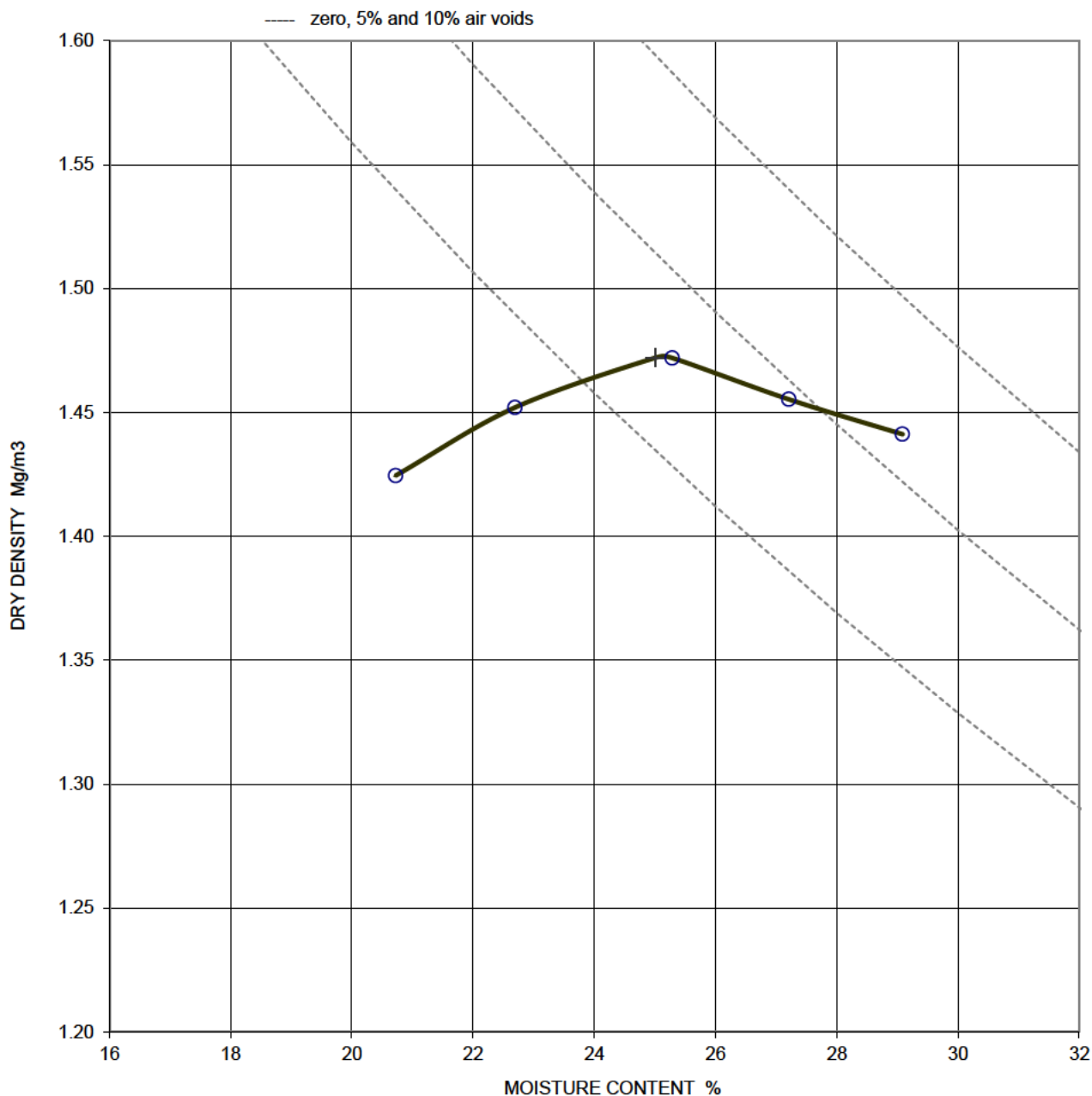
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DRY DENSITY / MOISTURE CONTENT RELATIONSHIP
BS1377 : PART 4 : 1990 : LIGHT COMPACTION, 2.5 kg rammer

Sample Details:	SAMPLE ID:	Hole No	ATK-TPM-03
	A9031-1920191204111005	Sample Depth (m BGL)	3.60 - 3.70
		Sample Type and No	B12
		Specimen Ref	



Soil description Brown slightly sandy CLAY.

Test method BS 1377:part 4:1990: clause 3.5, 2.5 kg rammer in a 1 litre mould
 Preparation Original material was natural, single sample tested
 Material > 37.5mm 0 %
 Material < 37.5mm > 20mm 0 %
 Particle density 2.65 assumed
 Remarks

Derived Parameters +

Maximum dry density, Mg/m³
1.47
 Optimum moisture content, %
25

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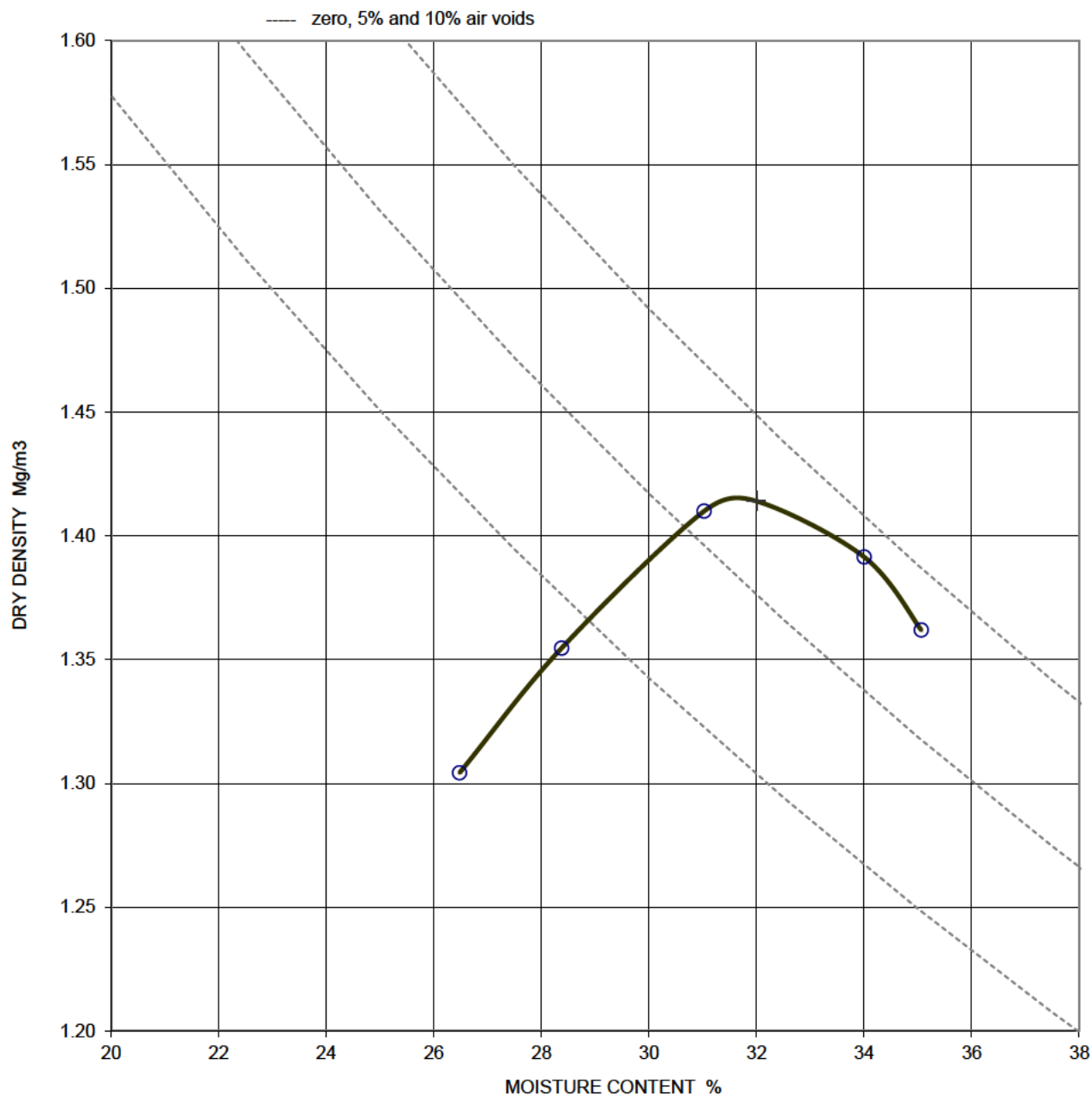
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DRY DENSITY / MOISTURE CONTENT RELATIONSHIP
BS1377 : PART 4 : 1990 : LIGHT COMPACTION, 2.5 kg rammer

Sample Details:	SAMPLE ID:	Hole No	ATK-TPM-04
	A9031-1920191204125051	Sample Depth (m BGL)	0.50 - 0.60
		Sample Type and No	B4
		Specimen Ref	



Soil description Brown CLAY.

Test method BS 1377:part 4:1990: clause 3.5, 2.5 kg rammer in a 1 litre mould

Preparation Original material was natural, single sample tested

Material > 37.5mm 0 %

Material < 37.5mm > 20mm 0 %

Particle density 2.70 assumed

Remarks

Derived Parameters +

Maximum dry density, Mg/m³
1.41

Optimum moisture content, %
32

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Project No A9031-19
Project Name HAVANT THICKET WATER STORAGE

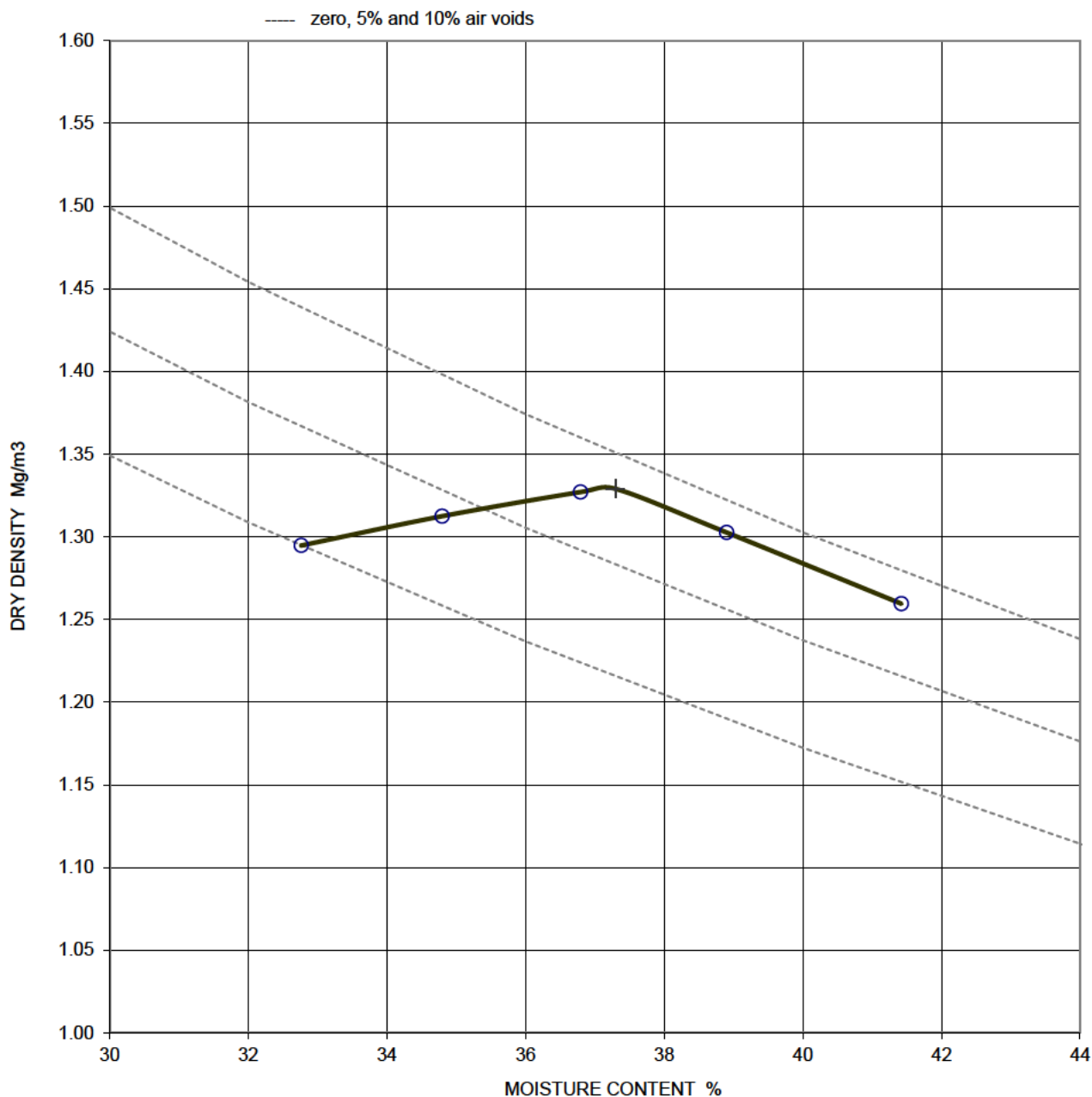
Figure
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DRY DENSITY / MOISTURE CONTENT RELATIONSHIP
BS1377 : PART 4 : 1990 : LIGHT COMPACTION, 2.5 kg rammer

Sample Details:	SAMPLE ID:	Hole No	ATK-TPM-05
	A9031-19-20191120031821	Sample Depth (m BGL)	0.70 - 1.00
		Sample Type and No	B4
		Specimen Ref	



Soil description Brown slightly sandy CLAY.

Test method BS 1377:part 4:1990: clause 3.5, 2.5 kg rammer in a 1 litre mould
 Preparation Original material was natural, single sample tested
 Material > 37.5mm 0 %
 Material < 37.5mm > 20mm 0 %
 Particle density 2.72 assumed
 Remarks

Derived Parameters +

Maximum dry density, Mg/m³
1.33
 Optimum moisture content, %
37

QA Ref
 SLD 4, 3.3/4
 Rev 2.5
 Sep 17



Project No A9031-19
 Project Name HAVANT THICKET WATER STORAGE

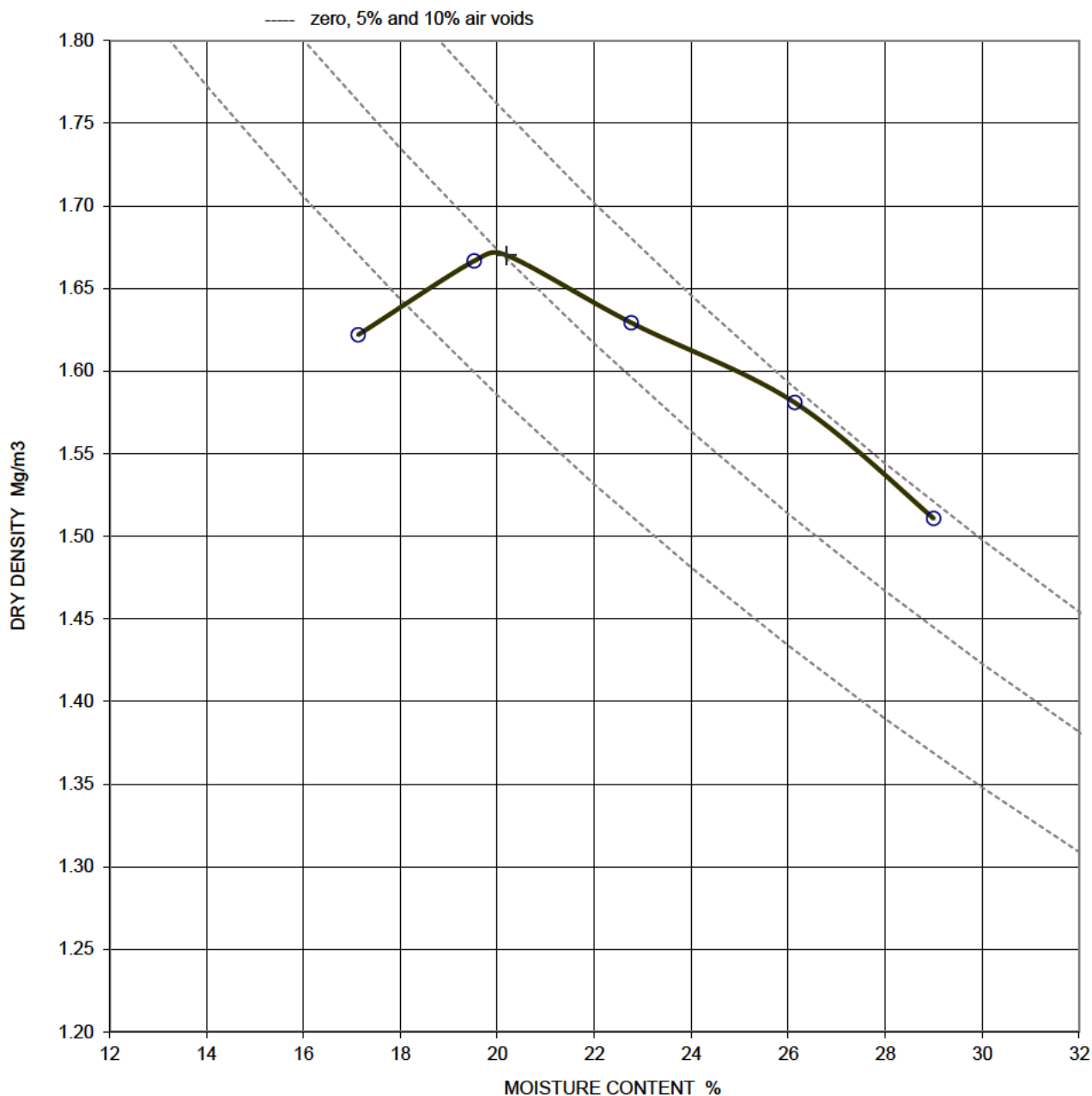
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DRY DENSITY / MOISTURE CONTENT RELATIONSHIP
BS1377 : PART 4 : 1990 : LIGHT COMPACTION, 2.5 kg rammer

Sample Details:	SAMPLE ID:	Hole No	ATK-TPM-05
	A9031-19-20191120032409	Sample Depth (m BGL)	3.30 - 3.40
		Sample Type and No	B15
		Specimen Ref	



Soil description Dark grey slightly sandy CLAY.

Test method BS 1377:part 4:1990: clause 3.5, 2.5 kg rammer in a 1 litre mould
 Preparation Original material was natural, single sample tested
 Material > 37.5mm 0 %
 Material < 37.5mm > 20mm 0 %
 Particle density 2.72 assumed
 Remarks

Derived Parameters +

Maximum dry density, Mg/m3
1.67
 Optimum moisture content, %
20

QA Ref
 SLD 4, 3.3/4
 Rev 2.5
 Sep 17



Project No A9031-19
 Project Name HAVANT THICKET WATER STORAGE

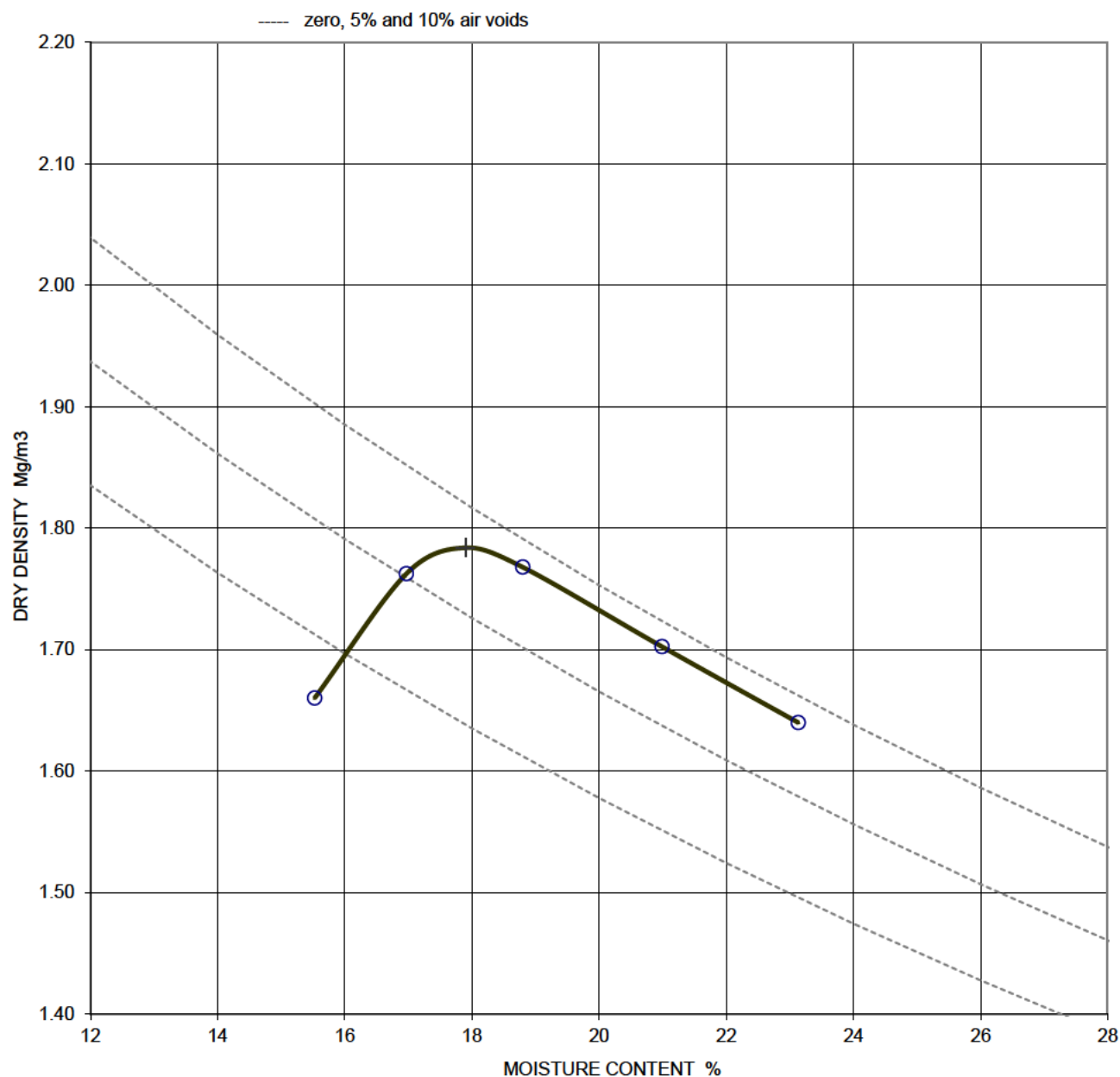
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DRY DENSITY / MOISTURE CONTENT RELATIONSHIP
BS1377 : PART 4 : 1990 : HEAVY COMPACTION, 4.5 kg rammer

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-09
	A9031-19-20191129111054	Sample Depth (m BGL)	7.65 - 8.20
		Sample Type and No	B28
		Specimen Ref	



Soil description Brown slightly sandy CLAY.

Test method BS 1377:part 4:1990: clause 3.5, 4.5 kg rammer in a 1 litre mould
 Preparation Original material was natural, single sample tested
 Material > 37.5mm 0 %
 Material < 37.5mm > 20mm 0 %
 Particle density 2.70 assumed
 Remarks

Derived Parameters +

Maximum dry density, Mg/m³
1.78
 Optimum moisture content, %
18

QA Ref
 SLD 4, 3.5/6
 Rev 2.8
 Sep 17



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 Project Name HAVANT THICKET WATER STORAGE

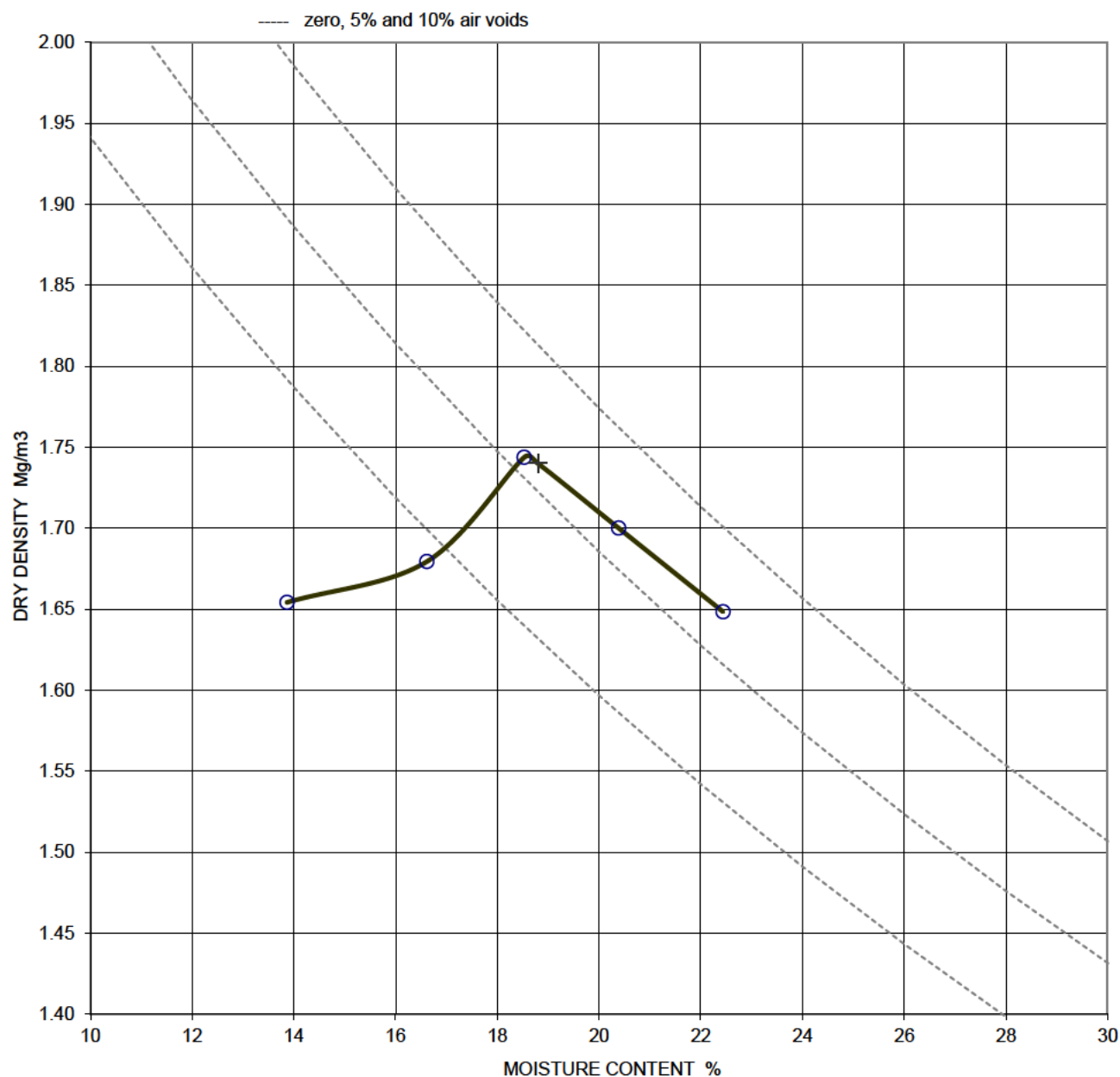
Figure
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DRY DENSITY / MOISTURE CONTENT RELATIONSHIP
BS1377 : PART 4 : 1990 : HEAVY COMPACTION, 4.5 kg rammer

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-13A
	A9031-1920191127033936	Sample Depth (m BGL)	6.50 - 7.00
		Sample Type and No	B29
		Specimen Ref	



Soil description Brown slightly sandy CLAY.

Test method BS 1377:part 4:1990: clause 3.5, 4.5 kg rammer in a 1 litre mould

Preparation Original material was natural, single sample tested

Material > 37.5mm 0 %

Material < 37.5mm > 20mm 0 %

Particle density 2.75 assumed

Remarks

Derived Parameters +

Maximum dry density, Mg/m³
1.74

Optimum moisture content, %
19

QA Ref
SLD 4, 3.5/6
Rev 2.8
Sep 17



Project No A9031-19
Project Name HAVANT THICKET WATER STORAGE

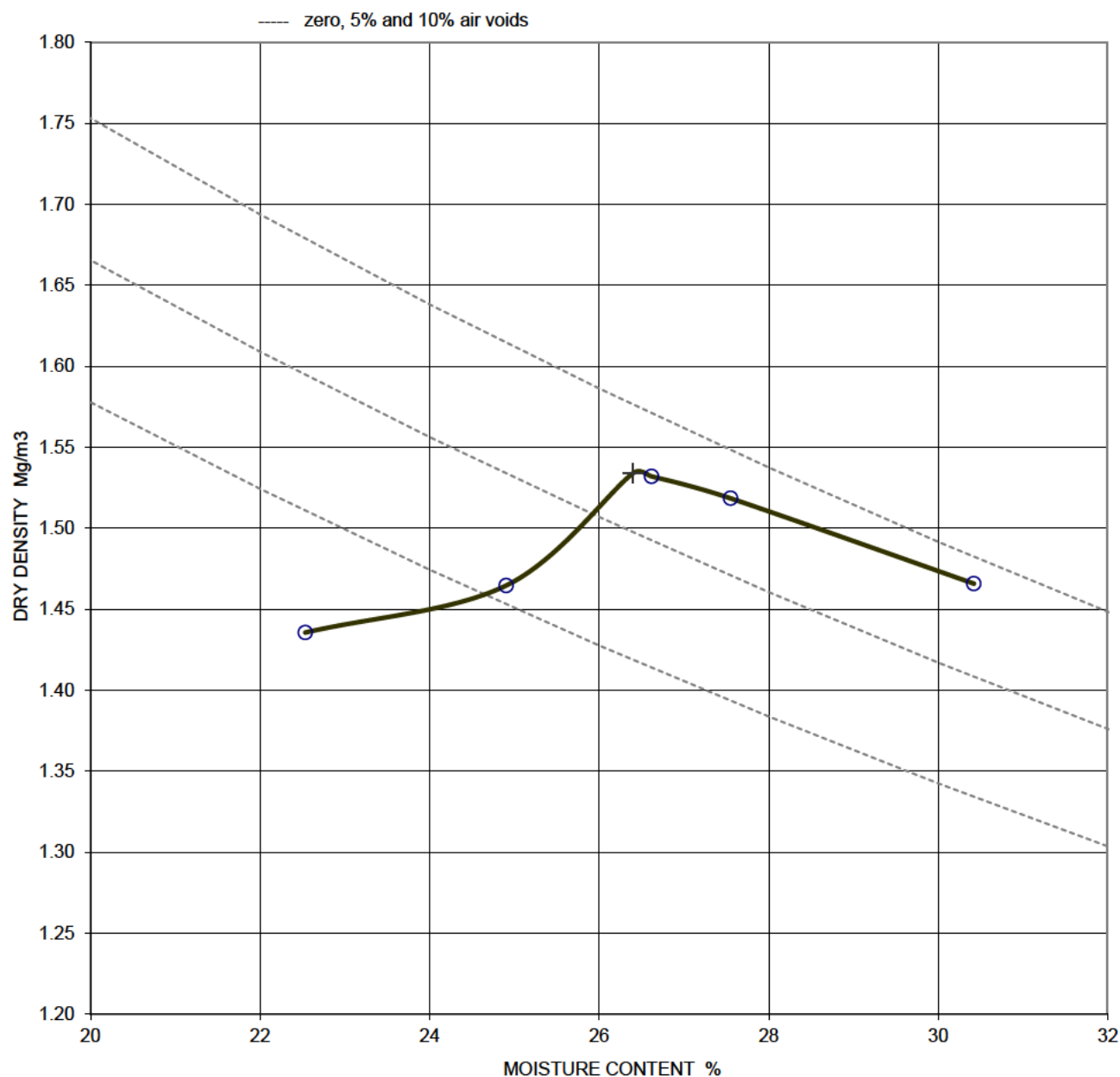
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DRY DENSITY / MOISTURE CONTENT RELATIONSHIP
BS1377 : PART 4 : 1990 : HEAVY COMPACTION, 4.5 kg rammer

Sample Details:	SAMPLE ID:	Hole No	ATK-TP-01
	A9031-1920191114114717	Sample Depth (m BGL)	3.00 - 3.10
		Sample Type and No	B14
		Specimen Ref	



Soil description Brown slightly sandy CLAY.

Test method BS 1377:part 4:1990: clause 3.5, 4.5 kg rammer in a 1 litre mould
 Preparation Original material was natural, single sample tested
 Material > 37.5mm 0 %
 Material < 37.5mm > 20mm 0 %
 Particle density 2.70 assumed
 Remarks

Derived Parameters +

Maximum dry density, Mg/m³
1.53
 Optimum moisture content, %
26

QA Ref
 SLD 4, 3.5/6
 Rev 2.8
 Sep 17



Project No A9031-19
 Project Name HAVANT THICKET WATER STORAGE

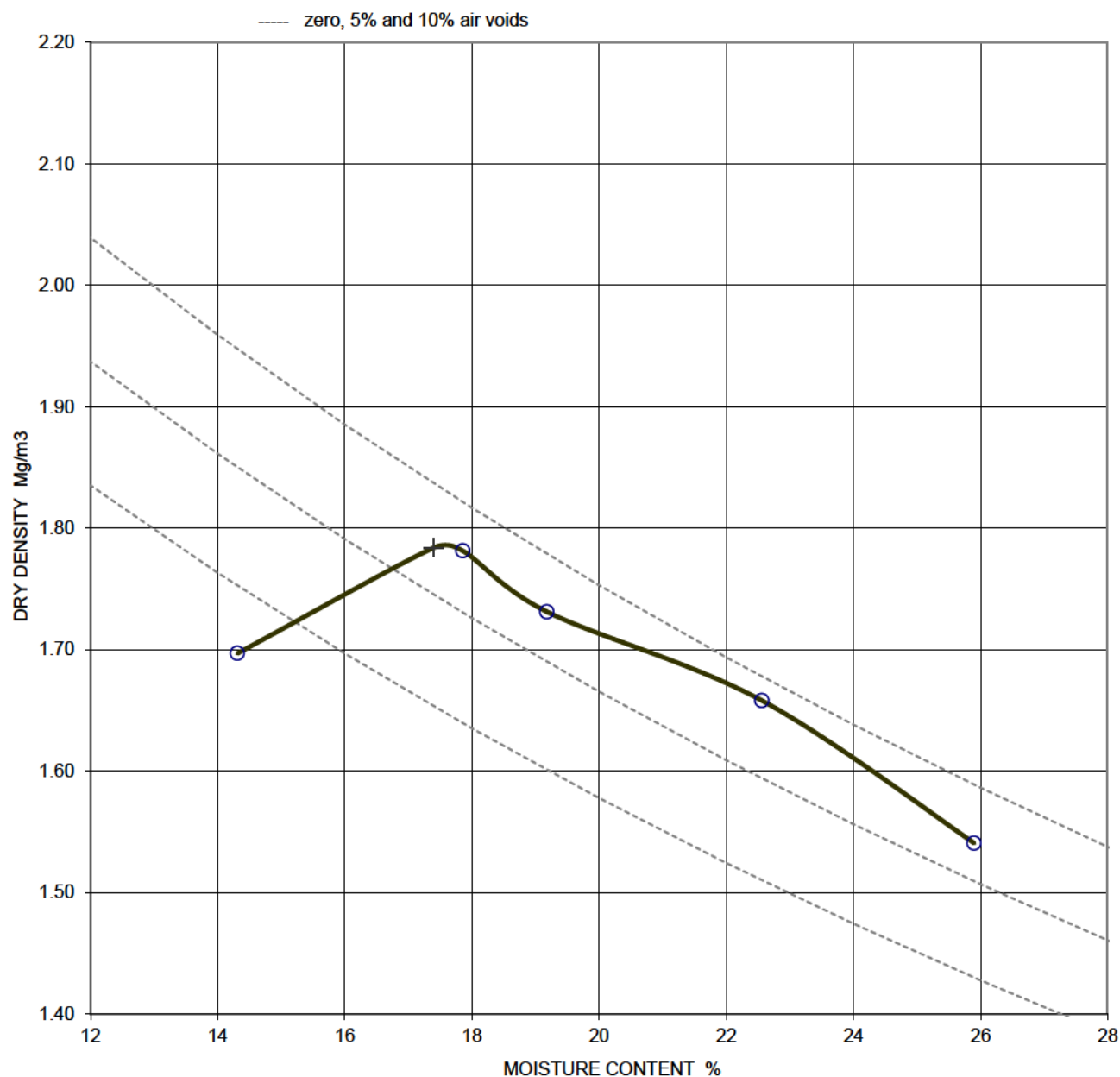
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DRY DENSITY / MOISTURE CONTENT RELATIONSHIP
BS1377 : PART 4 : 1990 : HEAVY COMPACTION, 4.5 kg rammer

Sample Details:	SAMPLE ID:	Hole No	ATK-TP-03
	A9031-1920191115080910	Sample Depth (m BGL)	3.10 - 3.20
		Sample Type and No	B13
		Specimen Ref	



Soil description Dark grey slightly sandy CLAY.

Test method BS 1377:part 4:1990: clause 3.5, 4.5 kg rammer in a 1 litre mould

Preparation Original material was natural, single sample tested

Material > 37.5mm 0 %

Material < 37.5mm > 20mm 0 %

Particle density 2.70 assumed

Remarks

Derived Parameters +

Maximum dry density, Mg/m³
1.78

Optimum moisture content, %
17

QA Ref
SLD 4, 3.5/6
Rev 2.8
Sep 17



Project No A9031-19
Project Name HAVANT THICKET WATER STORAGE

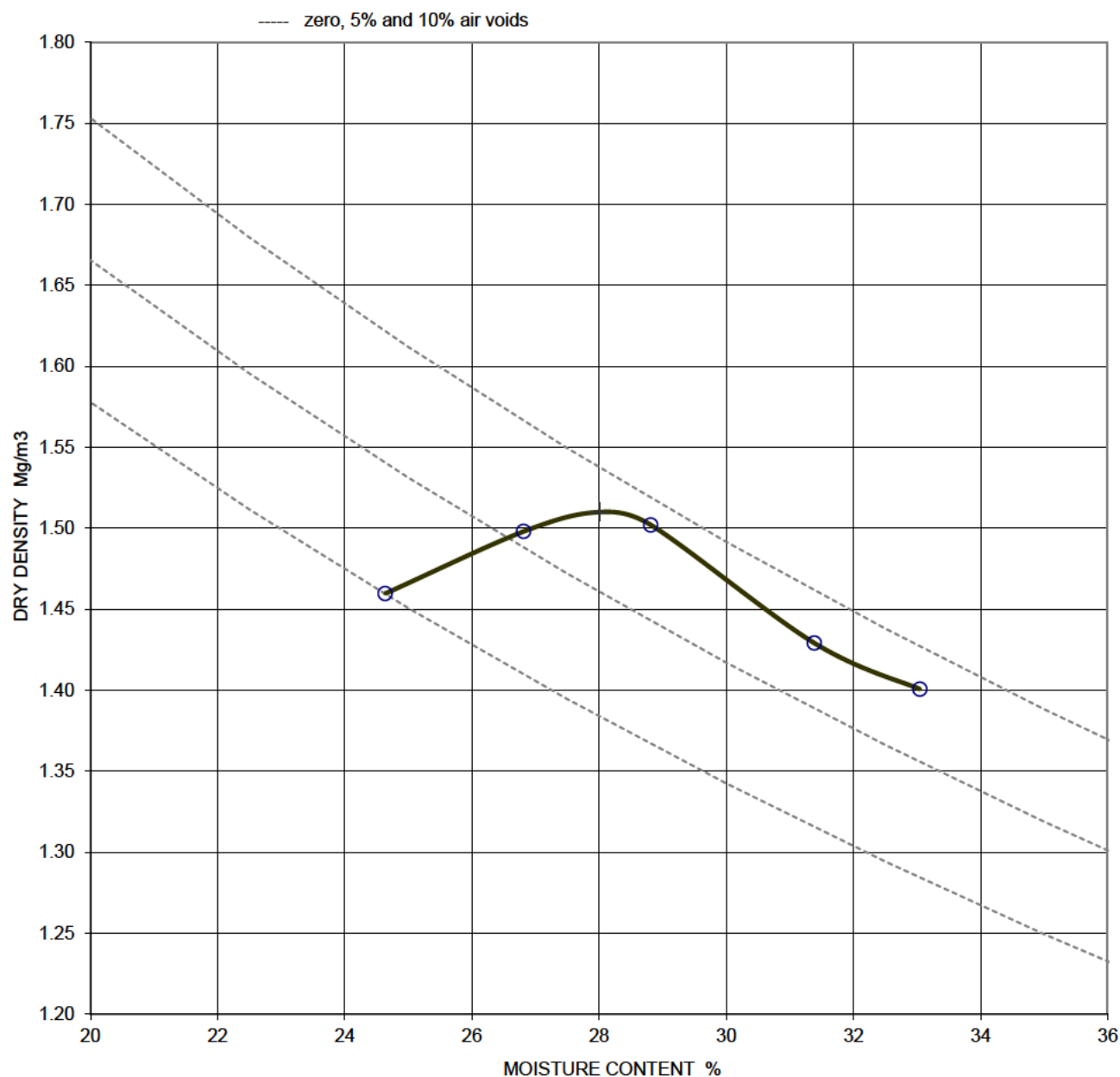
Figure
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DRY DENSITY / MOISTURE CONTENT RELATIONSHIP
BS1377 : PART 4 : 1990 : HEAVY COMPACTION, 4.5 kg rammer

Sample Details:	SAMPLE ID:	Hole No	ATK-TP-06
	A9031-1920191211040049	Sample Depth (m BGL)	0.90 - 1.20
		Sample Type and No	B8
		Specimen Ref	



Soil description Brown slightly sandy CLAY.

Test method BS 1377:part 4:1990: clause 3.5, 4.5 kg rammer in a 1 litre mould

Preparation Original material was natural, single sample tested

Material > 37.5mm 0 %

Material < 37.5mm > 20mm 0 %

Particle density 2.70 assumed

Remarks

Derived Parameters +

Maximum dry density, Mg/m3
1.51

Optimum moisture content, %
28

QA Ref
SLD 4, 3.5/6
Rev 2.8
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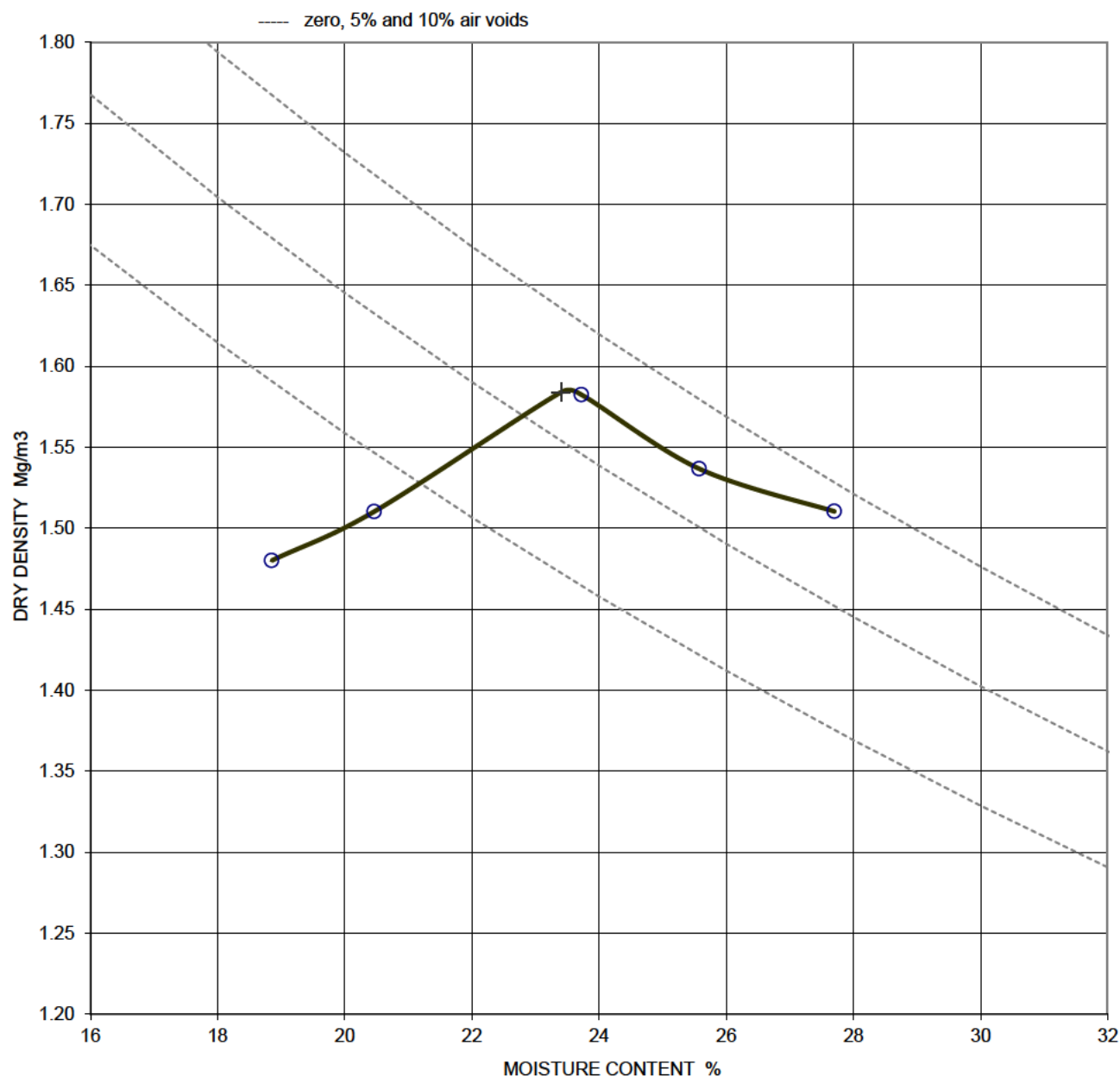
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DRY DENSITY / MOISTURE CONTENT RELATIONSHIP
BS1377 : PART 4 : 1990 : HEAVY COMPACTION, 4.5 kg rammer

Sample Details:	SAMPLE ID:	Hole No	ATK-TP-06
	A9031-1920191211040158	Sample Depth (m BGL)	3.00 - 3.50
		Sample Type and No	B13
		Specimen Ref	



Soil description Brown slightly sandy CLAY.

Test method BS 1377:part 4:1990: clause 3.5, 4.5 kg rammer in a 1 litre mould

Preparation Original material was natural, single sample tested

Material > 37.5mm 0 %

Material < 37.5mm > 20mm 0 %

Particle density 2.65 assumed

Remarks

Derived Parameters +

Maximum dry density, Mg/m³
1.58

Optimum moisture content, %
23

QA Ref
SLD 4, 3.5/6
Rev 2.8
Sep 17



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Project Name HAVANT THICKET WATER STORAGE

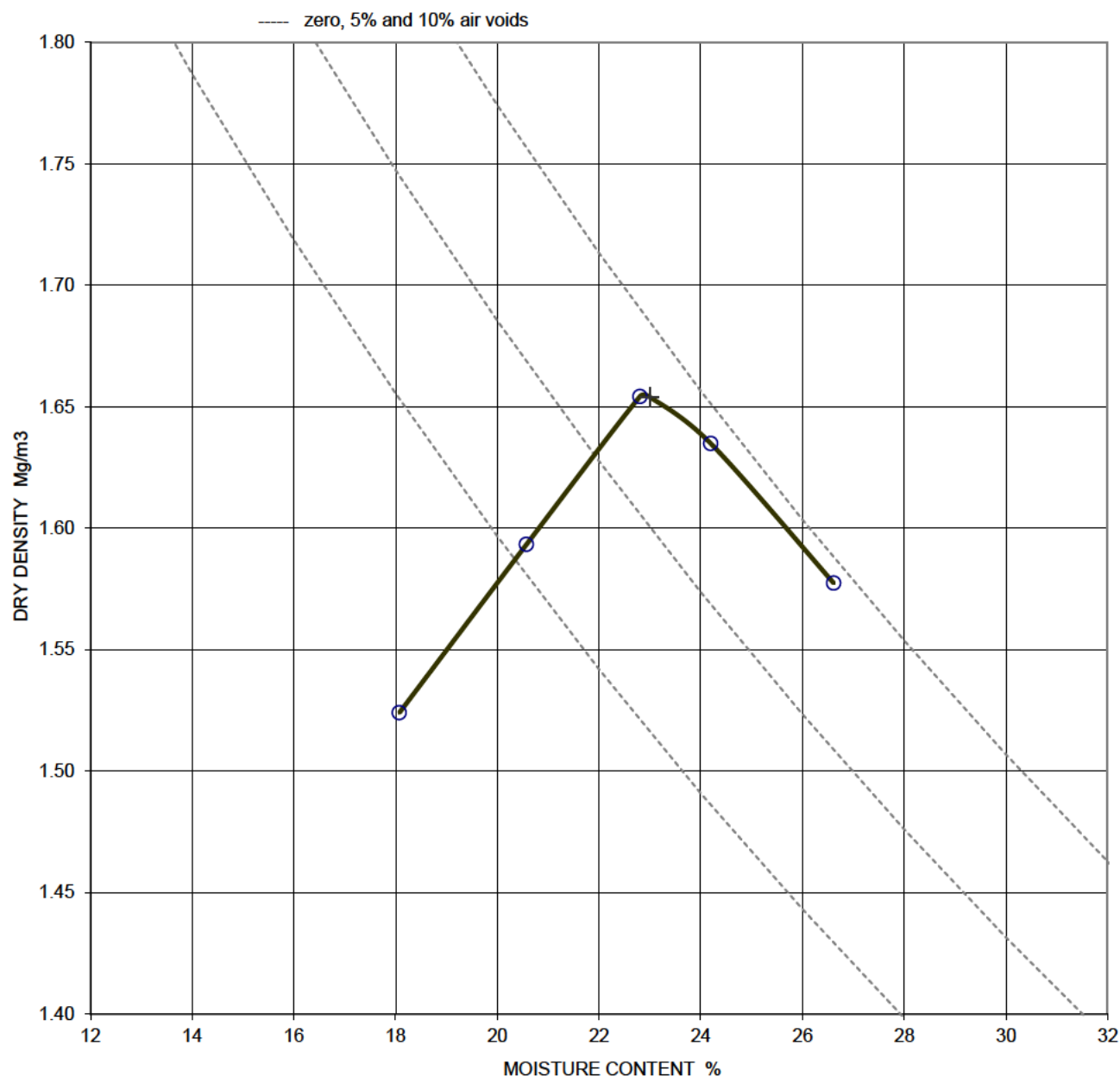
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DRY DENSITY / MOISTURE CONTENT RELATIONSHIP
BS1377 : PART 4 : 1990 : HEAVY COMPACTION, 4.5 kg rammer

Sample Details:	SAMPLE ID:	Hole No	ATK-TPM-02
	A9031-1920191204015240	Sample Depth (m BGL)	1.60 - 1.70
		Sample Type and No	B9
		Specimen Ref	



Soil description Brown slightly sandy CLAY.

Test method BS 1377:part 4:1990: clause 3.5, 4.5 kg rammer in a 1 litre mould

Preparation Original material was natural, single sample tested

Material > 37.5mm 0 %

Material < 37.5mm > 20mm 0 %

Particle density 2.75 assumed

Remarks

Derived Parameters +

Maximum dry density, Mg/m³
1.65

Optimum moisture content, %
23

QA Ref
SLD 4, 3.5/6
Rev 2.8
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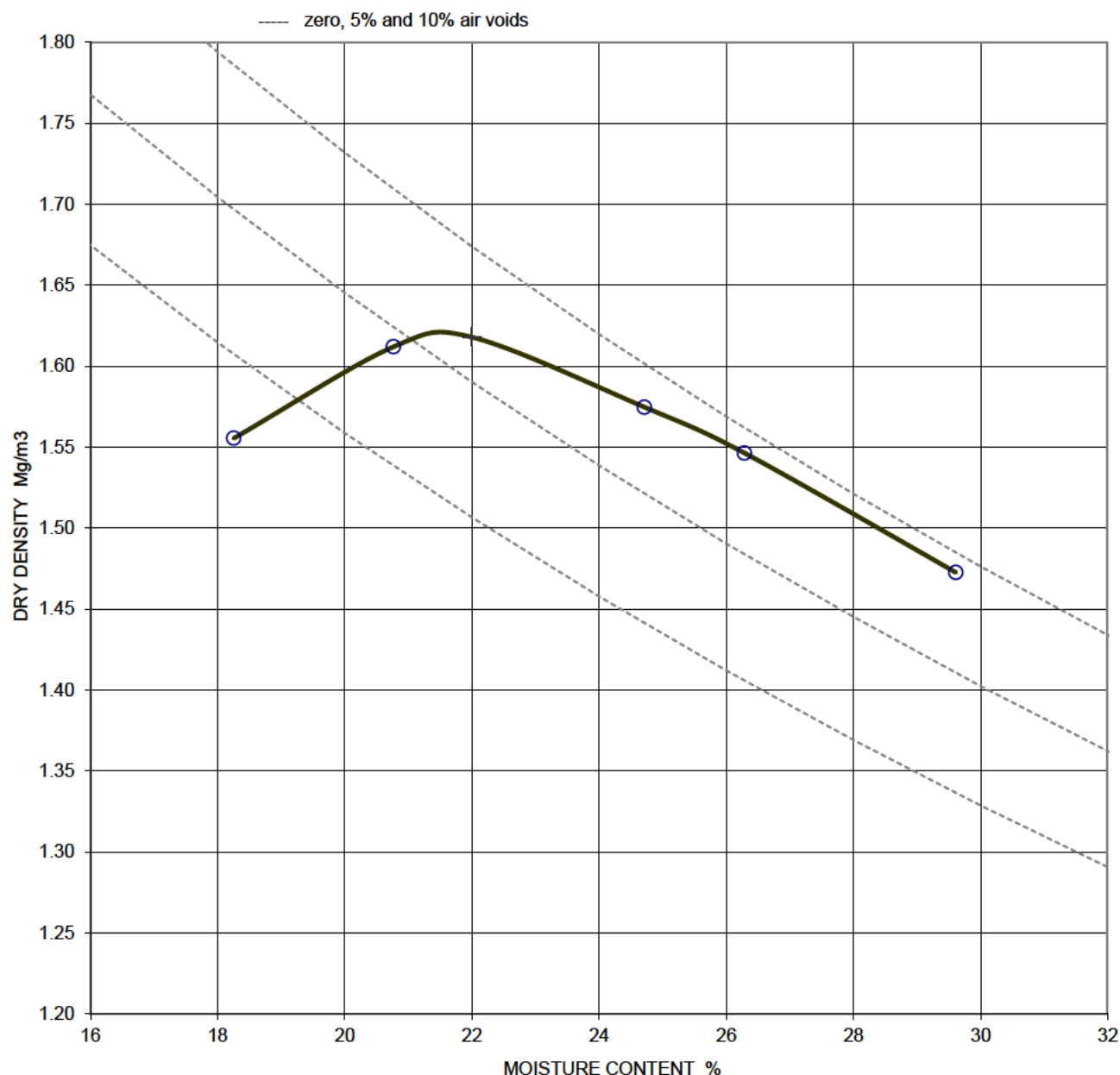
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DRY DENSITY / MOISTURE CONTENT RELATIONSHIP
BS1377 : PART 4 : 1990 : HEAVY COMPACTION, 4.5 kg rammer

Sample Details:	SAMPLE ID:	Hole No	ATK-TPM-05
	A9031-19-20191120032149	Sample Depth (m BGL)	2.00 - 2.20
		Sample Type and No	B10
		Specimen Ref	



Soil description Brown slightly sandy slightly gravelly CLAY.

Test method BS 1377:part 4:1990: clause 3.5, 4.5 kg rammer in a 1 litre mould

Preparation Original material was natural, single sample tested

Material > 37.5mm 0 %

Material < 37.5mm > 20mm 0 %

Particle density 2.65 assumed

Remarks

Derived Parameters +

Maximum dry density, Mg/m³
1.62

Optimum moisture content, %
22

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SLD 4, 3.5/6
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MOISTURE CONDITION VALUE (MCV) TEST

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-04
	A9031-1920191118090111	Sample Depth (m BGL)	0.80 - 1.20
		Sample Type and No	B6
		Specimen Ref	

Soil Description	Brown slightly sandy CLAY.
Preparation procedure and Remarks	BS1377:Part 1 and Part 4, clause 5.4 at natural moisture content

Test Data

Blows n	Penetration/ protrusion mm	Change in Penetration n to 4n mm
1	111.7	20.0
2	104.7	14.5
3	93.6	4.0
4	91.7	
6	90.7	
8	90.2	
12	89.6	
16		
24		
32		
48		
64		
96		
128		
192		
256		

Equipment

Mould diameter	100	mm
Height of drop	250	mm
Mass of rammer	7	kg

Sample data

Retained on 20mm sieve, removed	0	%
Mass of specimen used in test	1500	g

Specimen after test

Vane shear strength, if measured	24	kPa
Bulk density	1.38	Mg/m ³
Dry density	1.00	Mg/m ³

Moisture Content

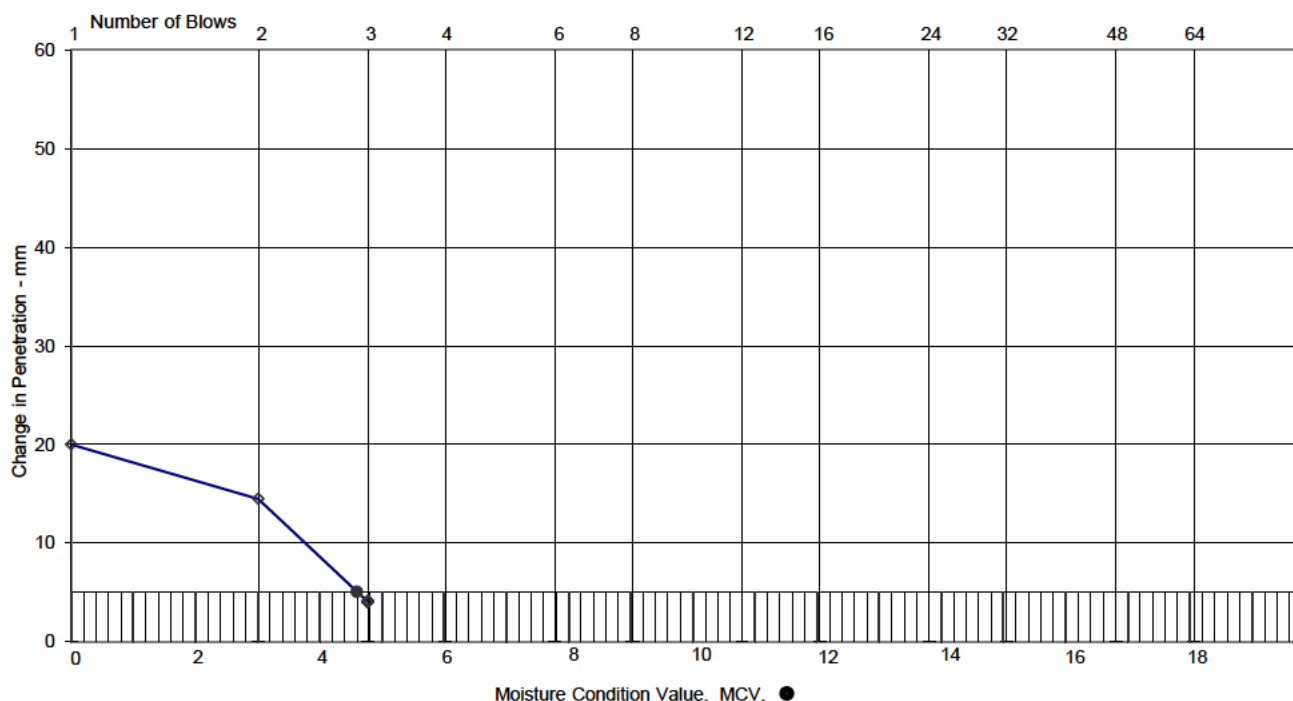
39.0 %

Moisture Condition Value, MCV

5.0

Method of interpretation

Steepest straight line



QA Ref
SLR 4, 5.4
Rev 2.7
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Figure
MCV

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MOISTURE CONDITION VALUE (MCV) TEST

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-06
	A9031-1920191205122237	Sample Depth (m BGL)	1
		Sample Type and No	B7
		Specimen Ref	

Soil Description	Light brown slightly sandy gravelly CLAY with two cobbles.
Preparation procedure and Remarks	BS1377:Part 1 and Part 4, clause 5.4 at natural moisture content

Test Data

Blows n	Penetration/ protrusion mm	Change in Penetration n to 4n mm
1	108.8	35.9
2	90.1	35.6
3	79.8	33.3
4	72.9	28.4
6	60.7	16.3
8	54.5	10.1
12	46.5	2.2
16	44.5	
24	44.4	
32	44.4	
48	44.3	
64		
96		
128		
192		
256		

Equipment

Mould diameter	100	mm
Height of drop	250	mm
Mass of rammer	7	kg

Sample data

Retained on 20mm sieve, removed	33	%
Mass of specimen used in test	1500	g

Specimen after test

Vane shear strength, if measured	68	kPa
Bulk density	2.01	Mg/m ³
Dry density	1.68	Mg/m ³

Moisture Content

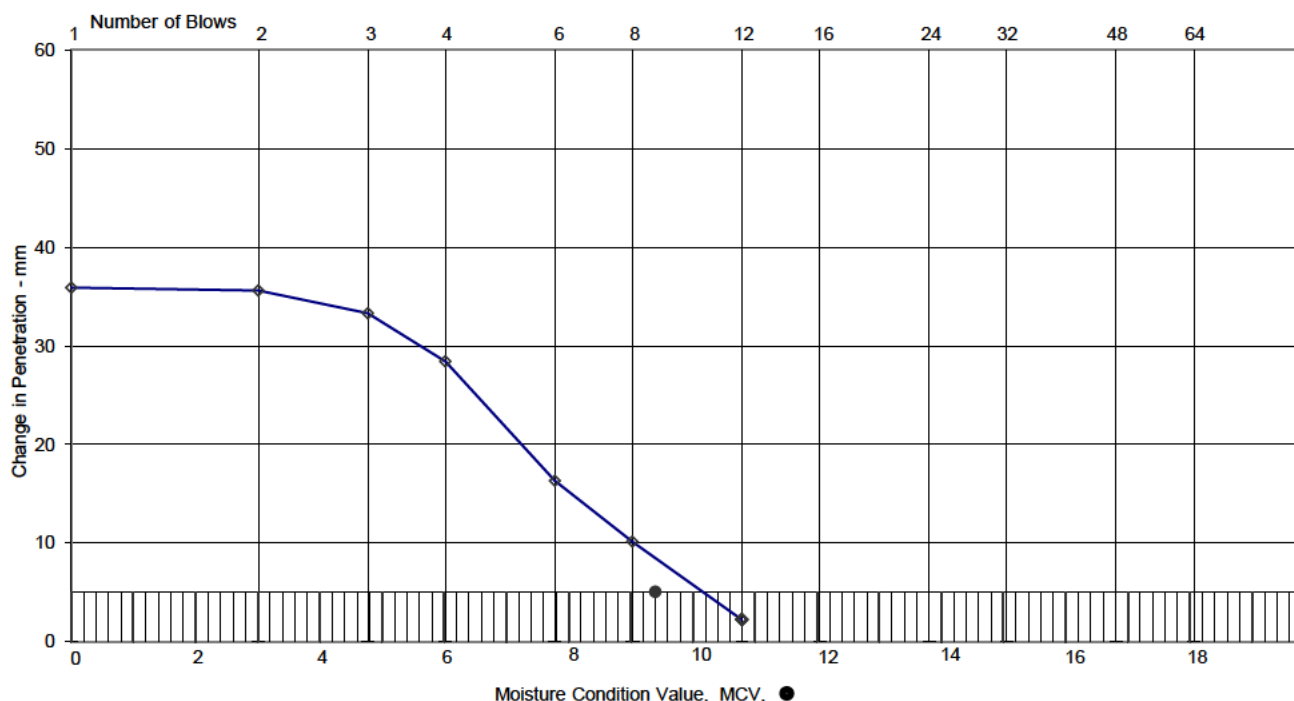
19.0 %

Moisture Condition Value, MCV

9.0

Method of interpretation

Steepest straight line



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MOISTURE CONDITION VALUE (MCV) TEST

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-07
	A9031-1920191128091244	Sample Depth (m BGL)	2.00 - 2.45
		Sample Type and No	UT7
		Specimen Ref	

Soil Description	Brown slightly sandy CLAY.
Preparation procedure and Remarks	BS1377:Part 1 and Part 4, clause 5.4 at natural moisture content

Test Data

Blows n	Penetration/ protrusion mm	Change in Penetration n to 4n mm
1	79.4	6.2
2	76.3	4.8
3	74.4	
4	73.2	
6	72.4	
8	71.5	
12		
16		
24		
32		
48		
64		
96		
128		
192		
256		

Equipment

Mould diameter	100	mm
Height of drop	250	mm
Mass of rammer	7	kg

Sample data

Retained on 20mm sieve, removed	0	%
Mass of specimen used in test	1500	g

Specimen after test

Vane shear strength, if measured	13	kPa
Bulk density	1.59	Mg/m3
Dry density	1.23	Mg/m3

Moisture Content

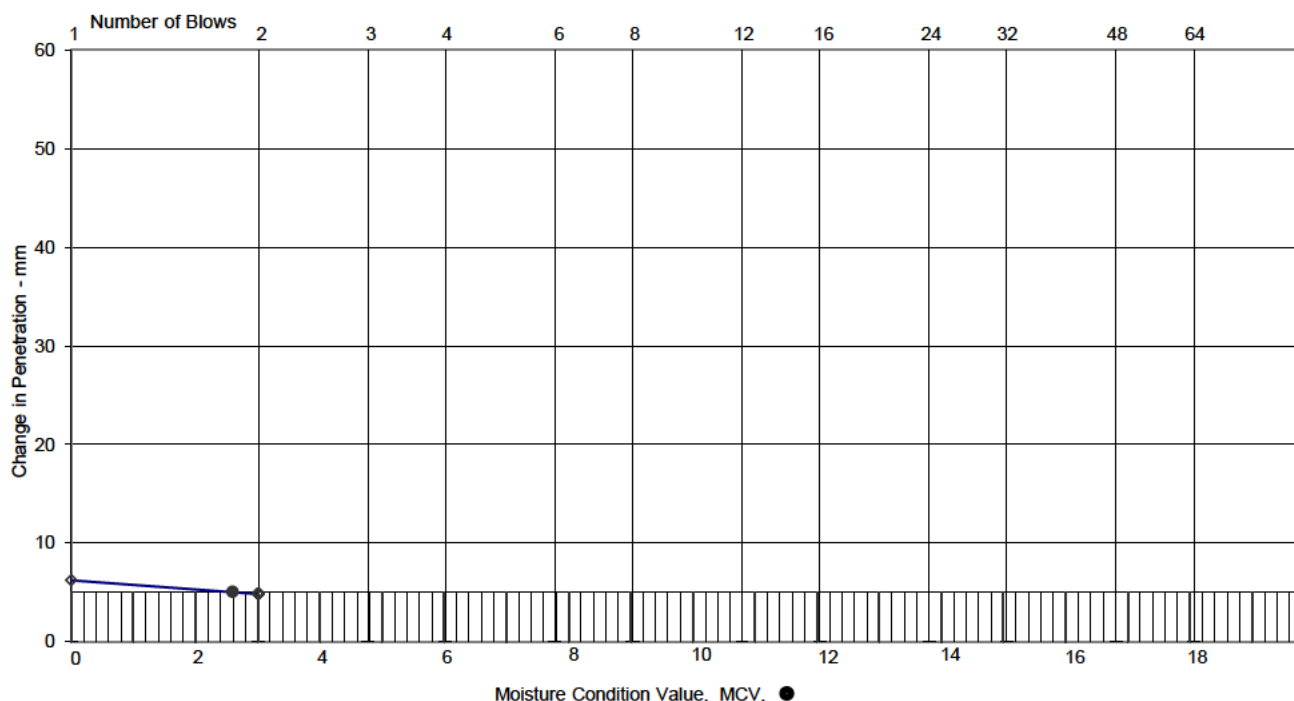
29.0 %

Moisture Condition Value, MCV

3.0

Method of interpretation

Steepest straight line



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MOISTURE CONDITION VALUE (MCV) TEST

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-07A
	A9031-1920191209025616	Sample Depth (m BGL)	3.50 - 4.00
		Sample Type and No	B11
		Specimen Ref	

Soil Description	Brown slightly sandy CLAY.
Preparation procedure and Remarks	BS1377:Part 1 and Part 4, clause 5.4 at natural moisture content

Test Data

Blows n	Penetration/ protrusion mm	Change in Penetration n to 4n mm
1	85.5	34.4
2	68.0	27.5
3	58.0	17.9
4	51.2	11.5
6	43.3	4.5
8	40.5	
12	40.1	
16	39.6	
24	38.8	
32		
48		
64		
96		
128		
192		
256		

Equipment

Mould diameter	100	mm
Height of drop	250	mm
Mass of rammer	7	kg

Sample data

Retained on 20mm sieve, removed	0	%
Mass of specimen used in test	1500	g

Specimen after test

Vane shear strength, if measured	18	kPa
Bulk density	2.21	Mg/m ³
Dry density	1.82	Mg/m ³

Moisture Content

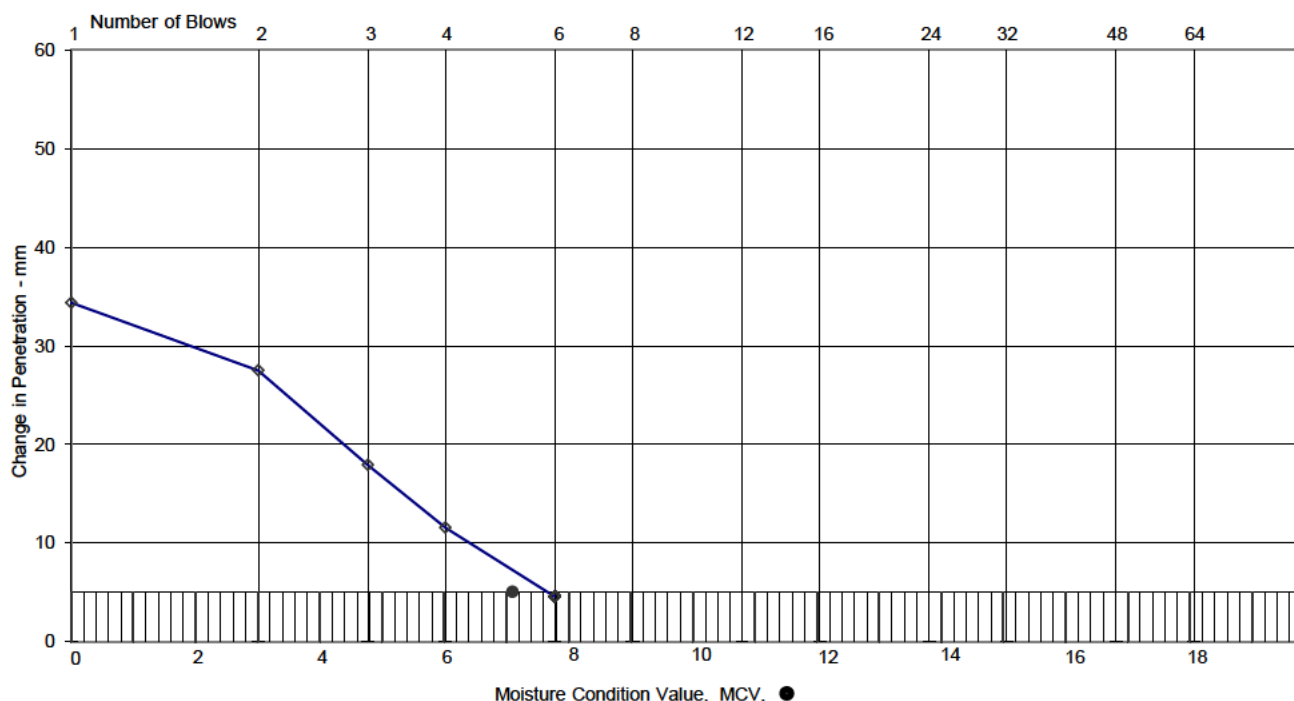
21.0 %

Moisture Condition Value, MCV

7.0

Method of interpretation

Steepest straight line



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MOISTURE CONDITION VALUE (MCV) TEST

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-07A
	A9031-1920191209030447	Sample Depth (m BGL)	9.50 - 10.00
		Sample Type and No	B33
		Specimen Ref	

Soil Description	Brown slightly sandy CLAY.
Preparation procedure and Remarks	BS1377:Part 1 and Part 4, clause 5.4 at natural moisture content

Test Data

Blows n	Penetration/ protrusion mm	Change in Penetration n to 4n mm
1	128.7	27.5
2	117.2	34.3
3	106.3	33.2
4	101.2	34.7
6	91.7	26.9
8	82.9	20.2
12	73.1	11.9
16	66.5	6.0
24	64.8	4.6
32	62.7	
48	61.2	
64	60.5	
96	60.2	
128		
192		
256		

Equipment

Mould diameter	100	mm
Height of drop	250	mm
Mass of rammer	7	kg

Sample data

Retained on 20mm sieve, removed	0	%
Mass of specimen used in test	1500	g

Specimen after test

Vane shear strength, if measured	86	kPa
Bulk density	1.78	Mg/m ³
Dry density	1.47	Mg/m ³

Moisture Content

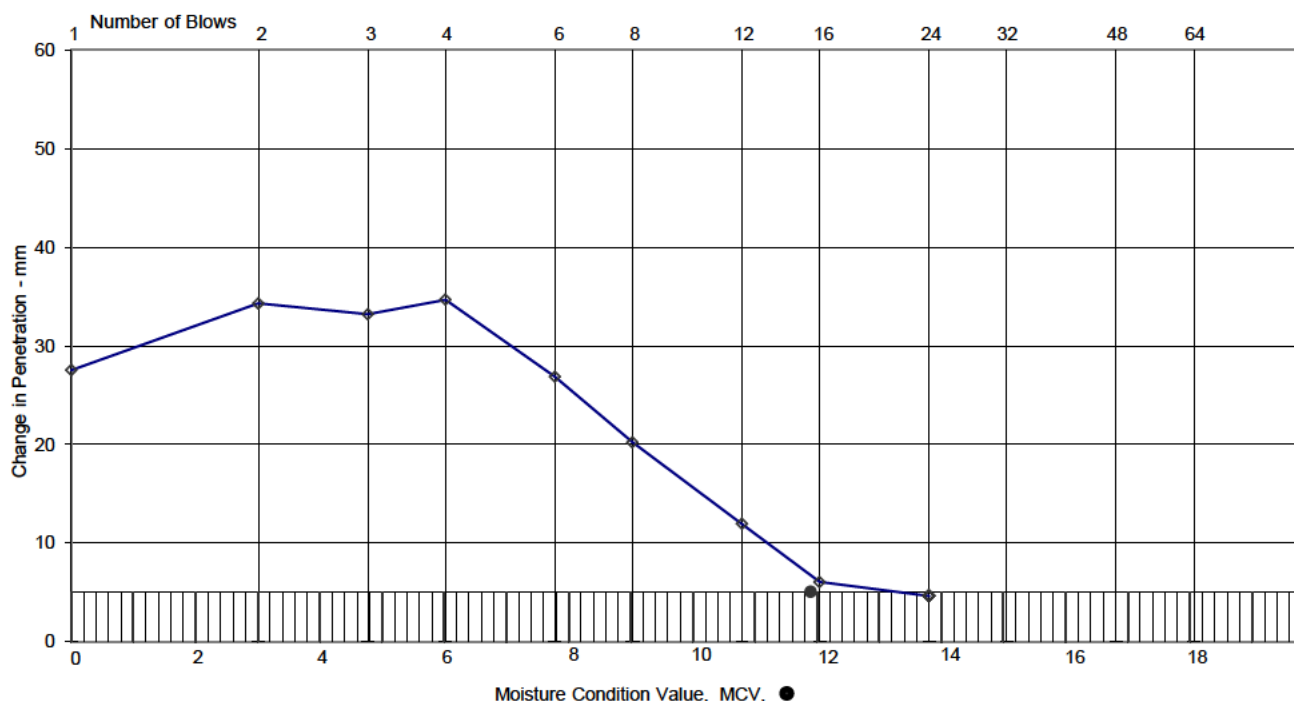
21.0 %

Moisture Condition Value, MCV

12.0

Method of interpretation

Steepest straight line



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MOISTURE CONDITION VALUE (MCV) TEST

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-08
	A9031-19-20191126042202	Sample Depth (m BGL)	3.20 - 3.65
		Sample Type and No	B13
		Specimen Ref	

Soil Description	Brown slightly sandy CLAY.
Preparation procedure and Remarks	BS1377:Part 1 and Part 4, clause 5.4 at natural moisture content

Test Data

Blows n	Penetration/ protrusion mm	Change in Penetration n to 4n mm
1	120.9	30.3
2	106.4	31.5
3	97.6	30.7
4	90.6	28.0
6	80.7	19.1
8	74.9	13.7
12	66.9	6.1
16	62.7	2.3
24	61.6	
32	61.2	
48	60.9	
64	60.4	
96		
128		
192		
256		

Equipment

Mould diameter	100	mm
Height of drop	250	mm
Mass of rammer	7	kg

Sample data

Retained on 20mm sieve, removed	0	%
Mass of specimen used in test	1500	g

Specimen after test

Vane shear strength, if measured	82	kPa
Bulk density	1.76	Mg/m ³
Dry density	1.43	Mg/m ³

Moisture Content

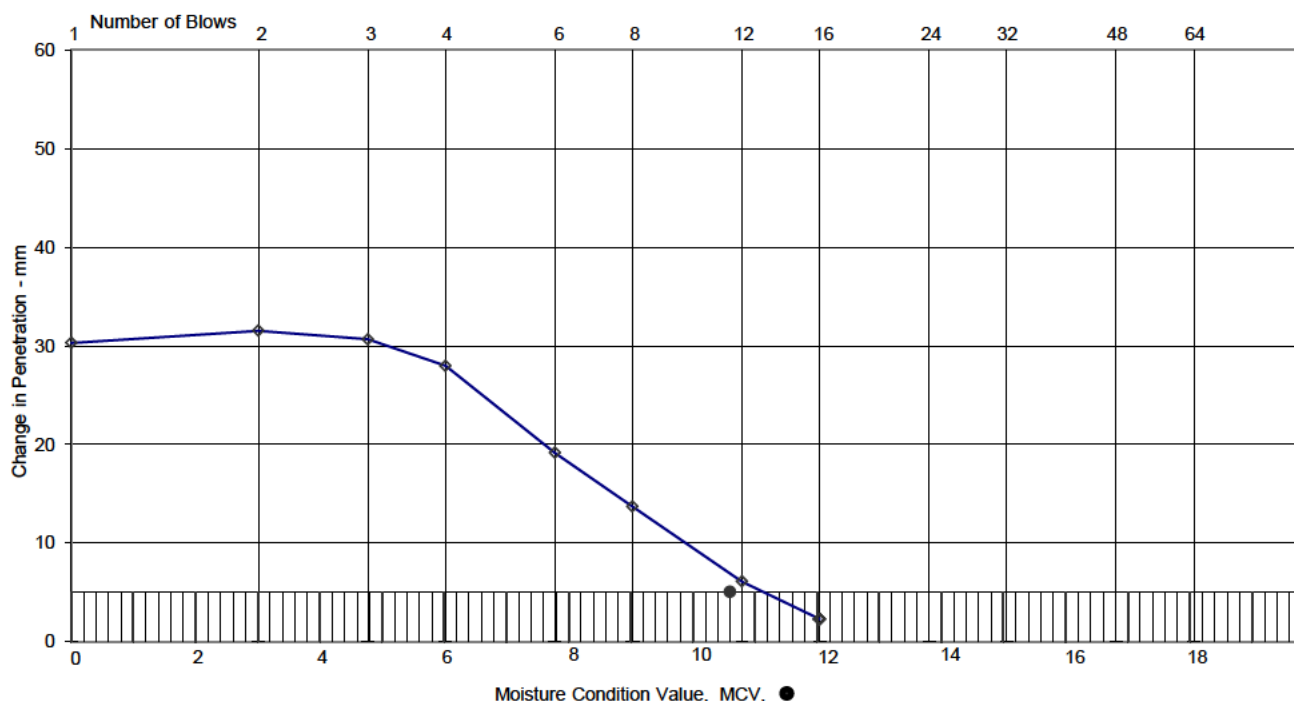
23.0 %

Moisture Condition Value, MCV

11.0

Method of interpretation

Steepest straight line



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SLR 4, 5.4
Rev 2.7
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MOISTURE CONDITION VALUE (MCV) TEST

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-08
	A9031-19-20191126042408	Sample Depth (m BGL)	4.65 - 5.20
		Sample Type and No	B17
		Specimen Ref	

Soil Description	Grey and reddish brown slightly sandy CLAY.
Preparation procedure and Remarks	BS1377:Part 1 and Part 4, clause 5.4 at natural moisture content

Test Data

Blows n	Penetration/ protrusion mm	Change in Penetration n to 4n mm
1	104.1	28.1
2	92.0	32.2
3	82.6	32.2
4	76.0	30.2
6	66.6	22.4
8	59.8	16.1
12	50.4	7.0
16	45.8	2.7
24	44.2	
32	43.7	
48	43.4	
64	43.1	
96		
128		
192		
256		

Equipment

Mould diameter	100	mm
Height of drop	250	mm
Mass of rammer	7	kg

Sample data

Retained on 20mm sieve, removed	0	%
Mass of specimen used in test	1500	g

Specimen after test

Vane shear strength, if measured	30	kPa
Bulk density	2.11	Mg/m ³
Dry density	1.69	Mg/m ³

Moisture Content

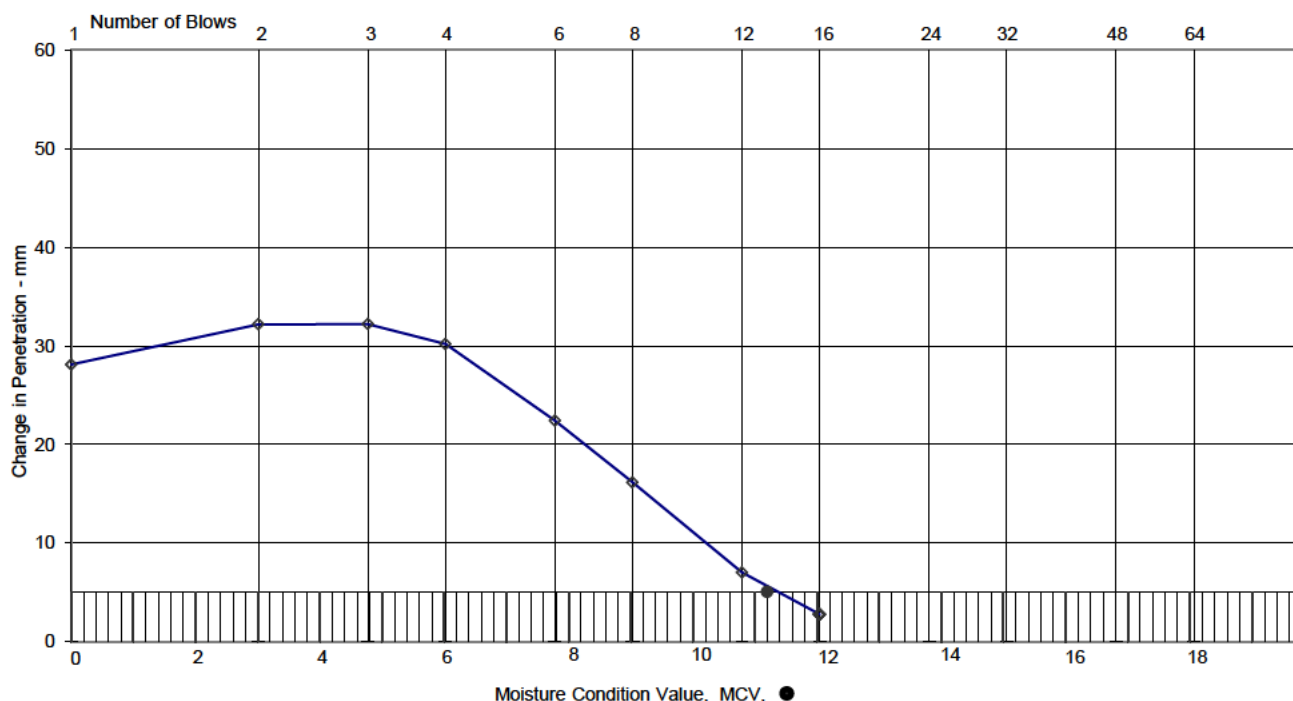
25.0 %

Moisture Condition Value, MCV

11.0

Method of interpretation

Steepest straight line



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MOISTURE CONDITION VALUE (MCV) TEST

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-08
	A9031-1920191205104621	Sample Depth (m BGL)	8.20 - 8.65
		Sample Type and No	B29
		Specimen Ref	

Soil Description	Brown mottled grey slightly sandy CLAY.
Preparation procedure and Remarks	BS1377:Part 1 and Part 4, clause 5.4 at natural moisture content

Test Data

Blows n	Penetration/ protrusion mm	Change in Penetration n to 4n mm
1	115.0	38.0
2	93.0	33.3
3	84.8	33.8
4	77.0	31.4
6	66.4	23.0
8	59.7	17.1
12	51.0	8.6
16	45.6	3.5
24	43.4	
32	42.7	
48	42.4	
64	42.1	
96		
128		
192		
256		

Equipment

Mould diameter	100	mm
Height of drop	250	mm
Mass of rammer	7	kg

Sample data

Retained on 20mm sieve, removed	0	%
Mass of specimen used in test	1500	g

Specimen after test

Vane shear strength, if measured	72	kPa
Bulk density	2.16	Mg/m3
Dry density	1.77	Mg/m3

Moisture Content

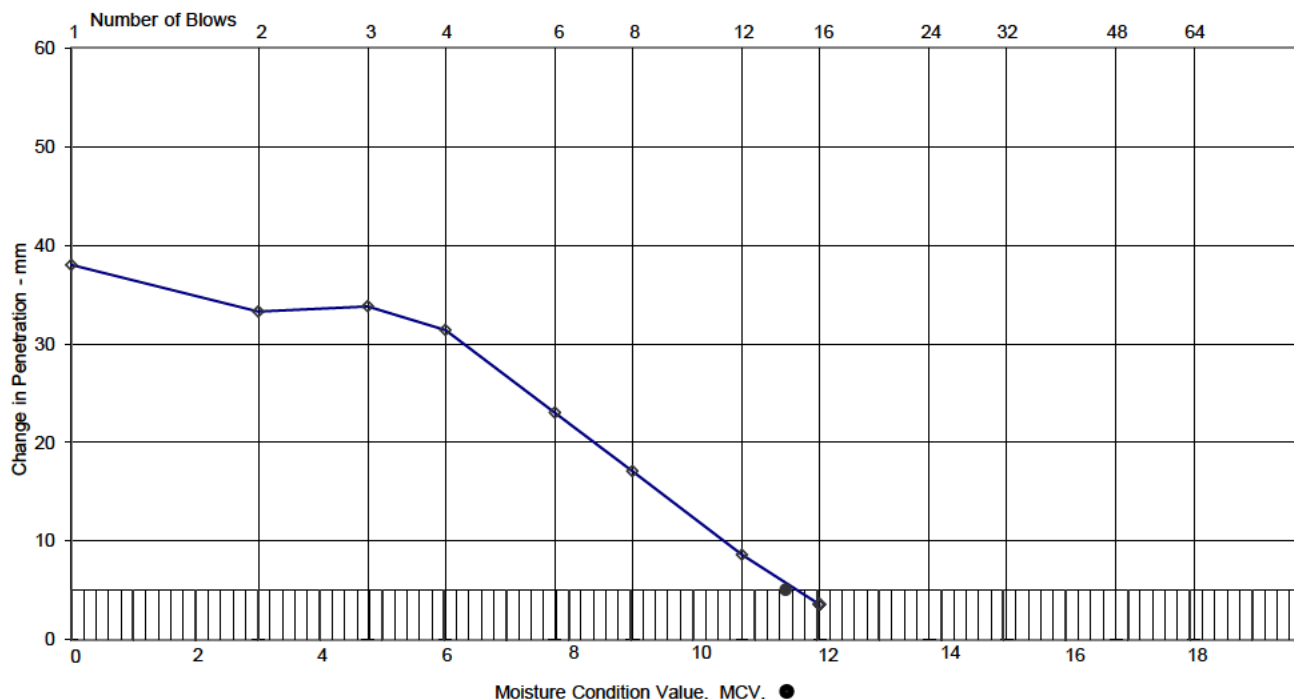
22.0 %

Moisture Condition Value, MCV

12.0

Method of interpretation

Steepest straight line



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MOISTURE CONDITION VALUE (MCV) TEST

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-09
	A9031-19-20191129110857	Sample Depth (m BGL)	6.50 - 6.95
		Sample Type and No	B24
		Specimen Ref	

Soil Description	Reddish brown slightly sandy CLAY.
Preparation procedure and Remarks	BS1377:Part 1 and Part 4, clause 5.4 at natural moisture content

Test Data

Blows n	Penetration/ protrusion mm	Change in Penetration n to 4n mm
1	102.0	25.8
2	90.3	35.9
3	81.8	37.3
4	76.2	35.0
6	61.9	21.5
8	54.4	14.3
12	44.5	4.8
16	41.2	
24	40.4	
32	40.1	
48	39.7	
64		
96		
128		
192		
256		

Equipment

Mould diameter	100	mm
Height of drop	250	mm
Mass of rammer	7	kg

Sample data

Retained on 20mm sieve, removed	0	%
Mass of specimen used in test	1500	g

Specimen after test

Vane shear strength, if measured	62	kPa
Bulk density	2.15	Mg/m ³
Dry density	1.80	Mg/m ³

Moisture Content

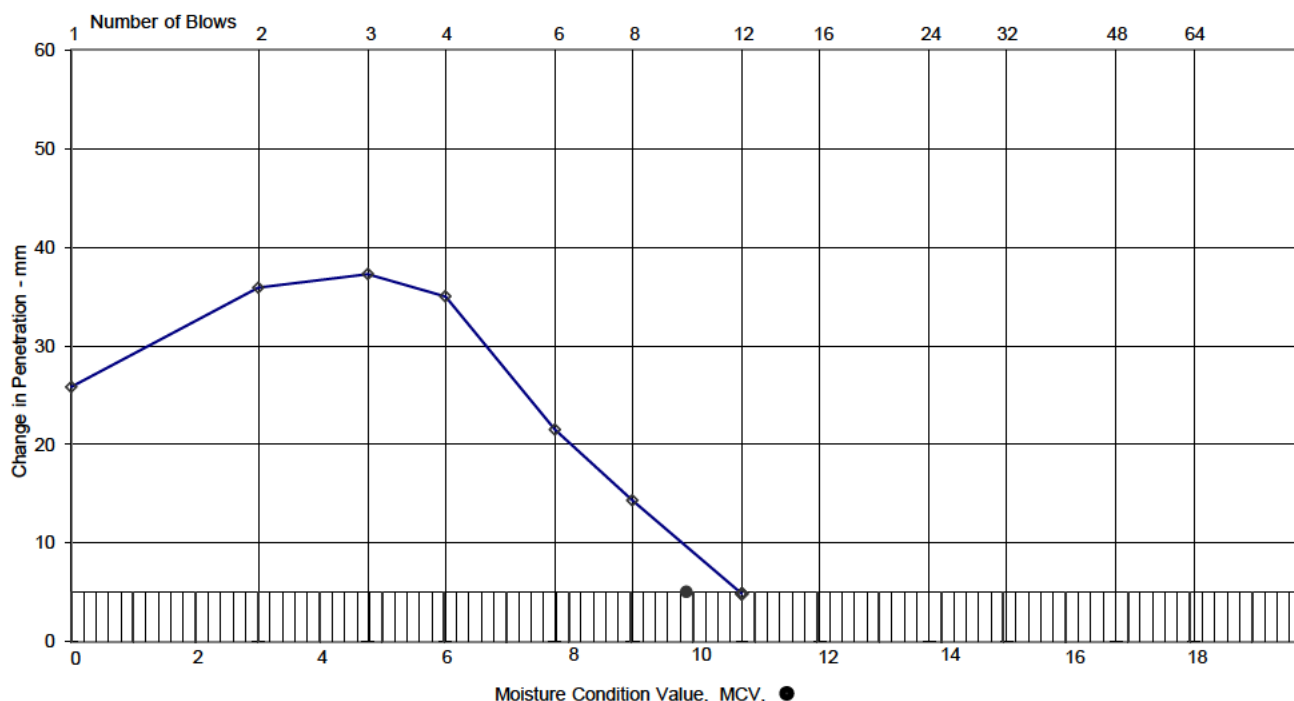
20.0 %

Moisture Condition Value, MCV

10.0

Method of interpretation

Steepest straight line



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MOISTURE CONDITION VALUE (MCV) TEST

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-09
	A9031-19-20191129111230	Sample Depth (m BGL)	8.65 - 9.20
		Sample Type and No	B31
		Specimen Ref	

Soil Description	Brown slightly sandy CLAY.
Preparation procedure and Remarks	BS1377:Part 1 and Part 4, clause 5.4 at natural moisture content

Test Data

Blows n	Penetration/ protrusion mm	Change in Penetration n to 4n mm
1	130.8	39.3
2	113.5	40.8
3	101.7	37.6
4	91.5	30.3
6	80.0	19.6
8	72.8	13.0
12	64.1	4.8
16	61.2	
24	60.4	
32	59.8	
48	59.3	
64		
96		
128		
192		
256		

Equipment

Mould diameter	100	mm
Height of drop	250	mm
Mass of rammer	7	kg

Sample data

Retained on 20mm sieve, removed	0	%
Mass of specimen used in test	1500	g

Specimen after test

Vane shear strength, if measured	66	kPa
Bulk density	1.79	Mg/m ³
Dry density	1.48	Mg/m ³

Moisture Content

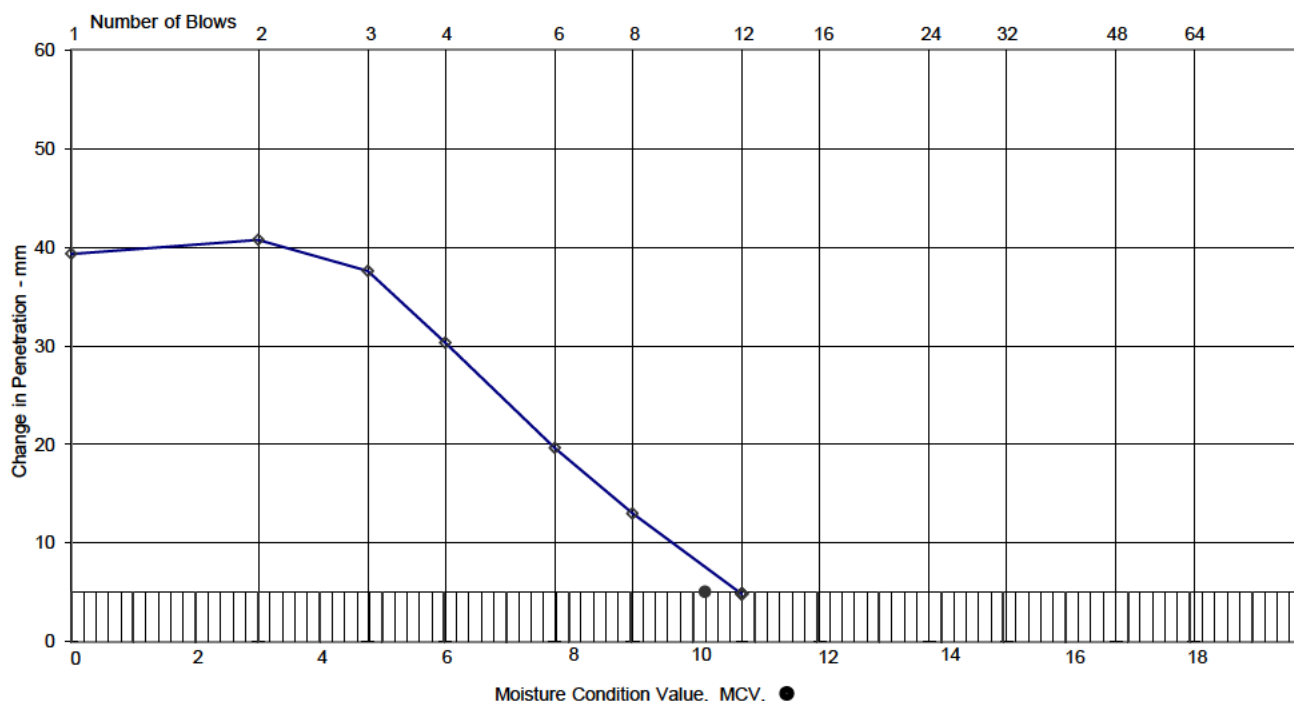
21.0 %

Moisture Condition Value, MCV

10.0

Method of interpretation

Steepest straight line



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MOISTURE CONDITION VALUE (MCV) TEST

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-10
	A9031-1920191122011622	Sample Depth (m BGL)	1.20 - 1.65
		Sample Type and No	UT5
		Specimen Ref	

Soil Description	Brown slightly sandy CLAY.
Preparation procedure and Remarks	BS1377:Part 1 and Part 4, clause 5.4 at natural moisture content

Test Data

Blows n	Penetration/ protrusion mm	Change in Penetration n to 4n mm
1	104.3	28.4
2	90.6	29.8
3	81.9	25.1
4	75.9	23.1
6	65.8	14.8
8	60.8	10.4
12	56.8	6.7
16	52.8	3.5
24	51.0	
32	50.4	
48	50.1	
64	49.4	
96		
128		
192		
256		

Equipment

Mould diameter	100	mm
Height of drop	250	mm
Mass of rammer	7	kg

Sample data

Retained on 20mm sieve, removed	0	%
Mass of specimen used in test	1500	g

Specimen after test

Vane shear strength, if measured	70	kPa
Bulk density	1.95	Mg/m3
Dry density	1.48	Mg/m3

Moisture Content

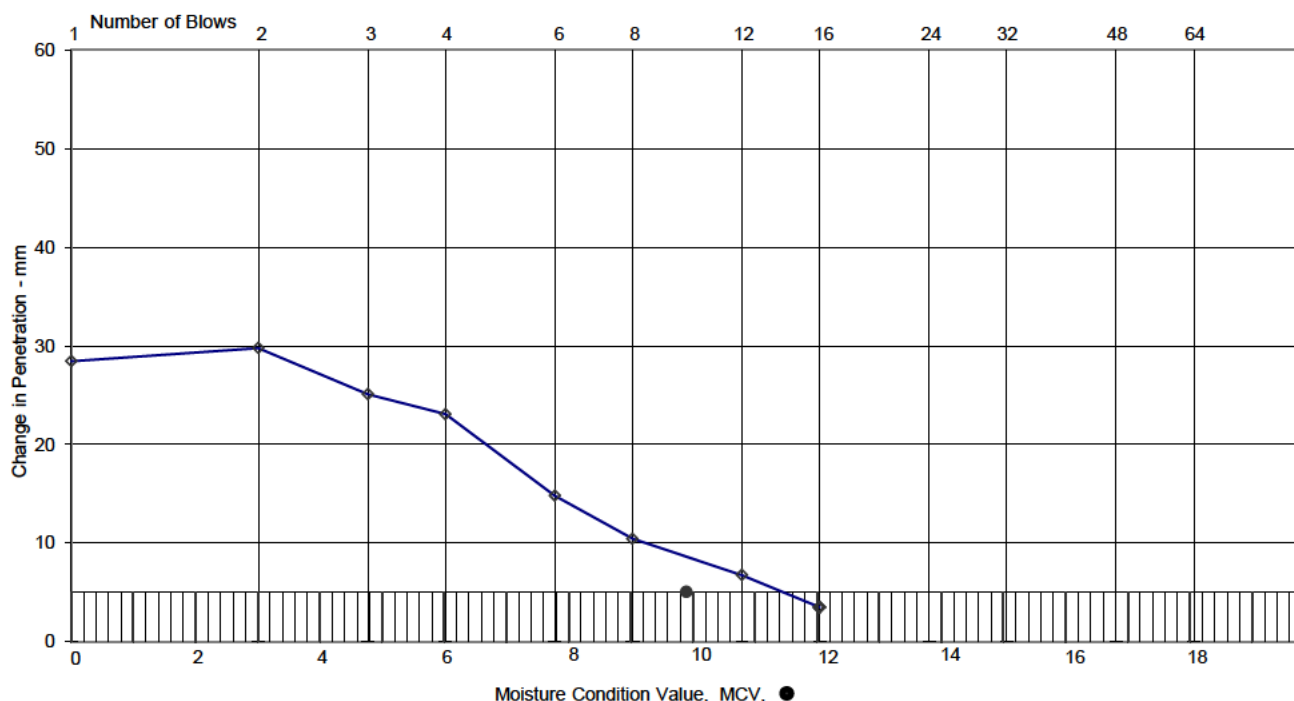
32.0 %

Moisture Condition Value, MCV

10.0

Method of interpretation

Steepest straight line



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MOISTURE CONDITION VALUE (MCV) TEST

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-12
	A9031-1920191121112306	Sample Depth (m BGL)	2.00 - 2.45
		Sample Type and No	UT8
		Specimen Ref	

Soil Description	Brown slightly sandy CLAY.
Preparation procedure and Remarks	BS1377:Part 1 and Part 4, clause 5.4 at natural moisture content

Test Data

Blows n	Penetration/ protrusion mm	Change in Penetration n to 4n mm
1	101.2	43.2
2	78.9	24.7
3	64.3	11.3
4	58.0	6.1
6	55.5	4.3
8	54.2	
12	53.0	
16	51.9	
24	51.2	
32		
48		
64		
96		
128		
192		
256		

Equipment

Mould diameter	100	mm
Height of drop	250	mm
Mass of rammer	7	kg

Sample data

Retained on 20mm sieve, removed	0	%
Mass of specimen used in test	1500	g

Specimen after test

Vane shear strength, if measured	20	kPa
Bulk density	1.87	Mg/m ³
Dry density	1.35	Mg/m ³

Moisture Content

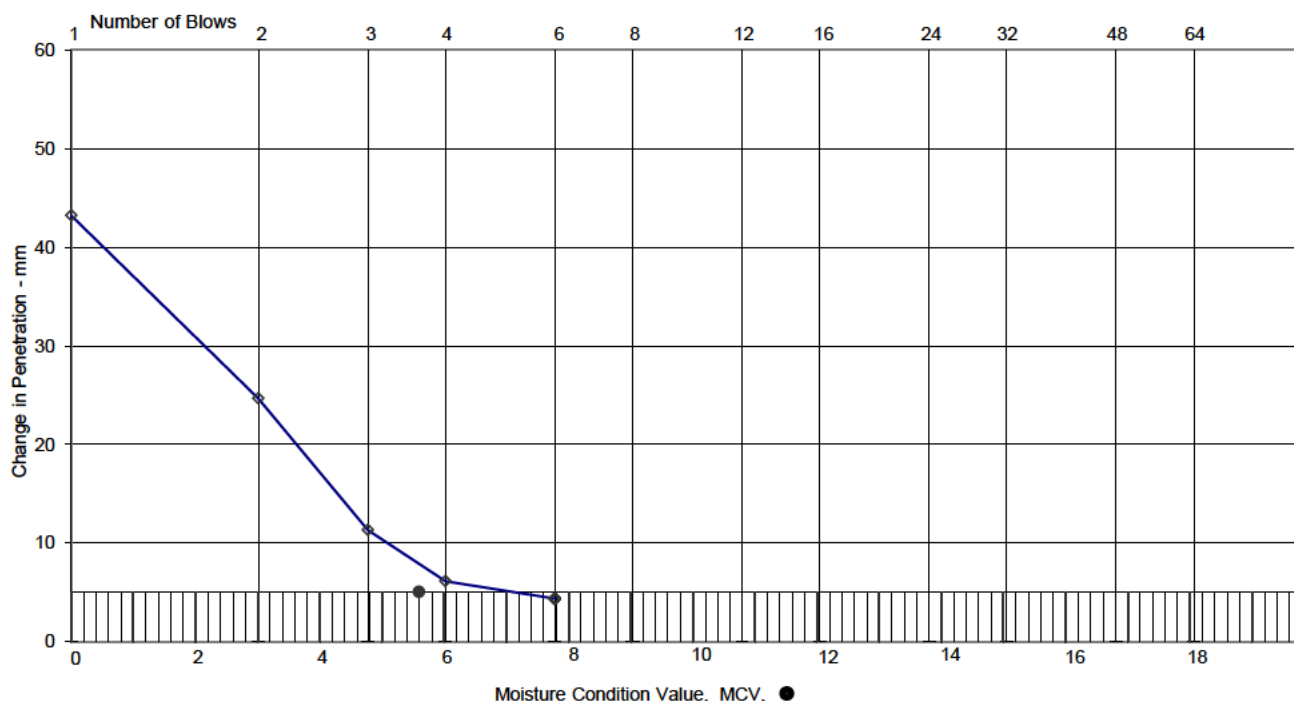
39.0 %

Moisture Condition Value, MCV

6.0

Method of interpretation

Steepest straight line



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MOISTURE CONDITION VALUE (MCV) TEST

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-12
	A9031-1920191121112417	Sample Depth (m BGL)	5.00 - 5.45
		Sample Type and No	UT19
		Specimen Ref	

Soil Description	Reddish brown mottled grey slightly gravelly CLAY.
Preparation procedure and Remarks	BS1377:Part 1 and Part 4, clause 5.4 at natural moisture content

Test Data

Blows n	Penetration/ protrusion mm	Change in Penetration n to 4n mm
1	119.0	32.9
2	103.4	34.4
3	93.1	31.6
4	86.1	28.1
6	75.4	20.4
8	68.9	15.6
12	61.5	8.8
16	58.0	5.8
24	55.0	3.8
32	53.3	
48	52.7	
64	52.2	
96	51.2	
128		
192		
256		

Equipment

Mould diameter	100	mm
Height of drop	250	mm
Mass of rammer	7	kg

Sample data

Retained on 20mm sieve, removed	0	%
Mass of specimen used in test	1500	g

Specimen after test

Vane shear strength, if measured	90	kPa
Bulk density	1.94	Mg/m ³
Dry density	1.66	Mg/m ³

Moisture Content

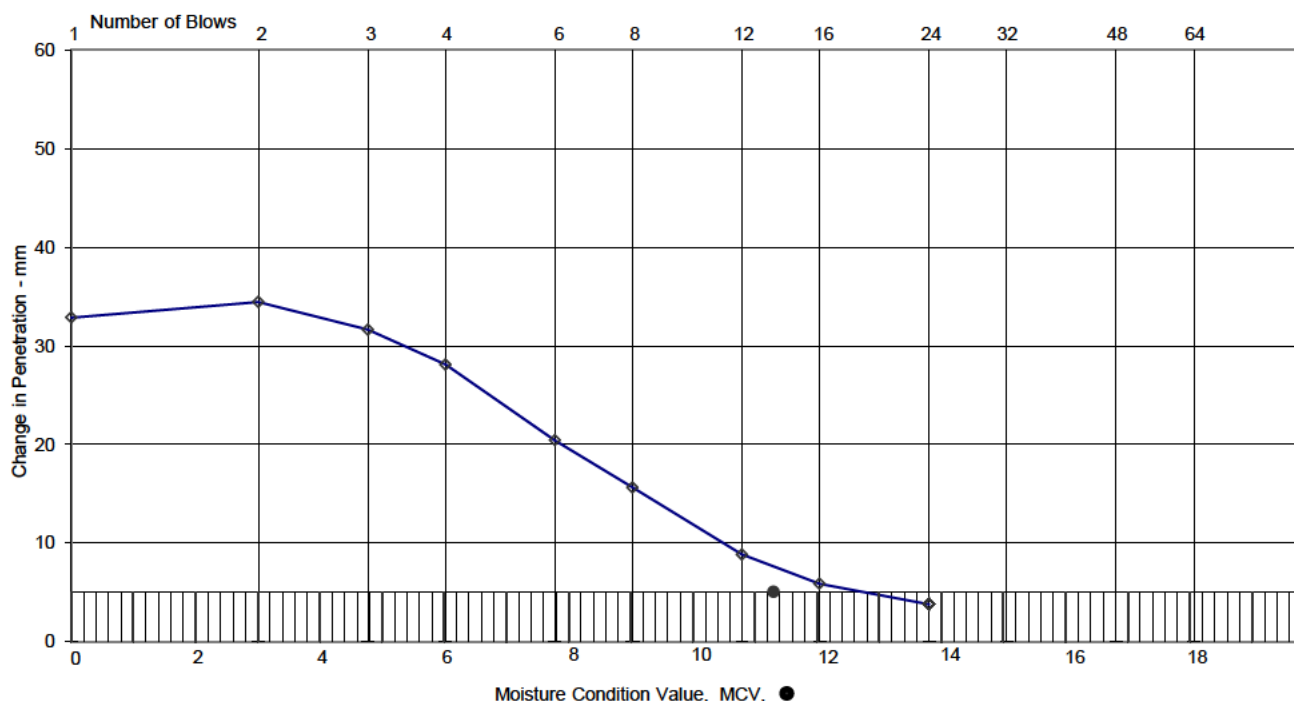
17.0 %

Moisture Condition Value, MCV

11.0

Method of interpretation

Steepest straight line



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MOISTURE CONDITION VALUE (MCV) TEST

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-13A
	A9031-1920191127033323	Sample Depth (m BGL)	0.50 - 0.80
		Sample Type and No	B4
		Specimen Ref	

Soil Description	Brown slightly sandy CLAY.
Preparation procedure and Remarks	BS1377:Part 1 and Part 4, clause 5.4 at natural moisture content

Test Data

Blows n	Penetration/ protrusion mm	Change in Penetration n to 4n mm
1	108.8	33.5
2	94.6	37.1
3	83.6	28.5
4	75.3	21.3
6	64.2	9.9
8	57.5	3.6
12	55.1	
16	54.0	
24	54.3	
32	53.9	
48		
64		
96		
128		
192		
256		

Equipment

Mould diameter	100	mm
Height of drop	250	mm
Mass of rammer	7	kg

Sample data

Retained on 20mm sieve, removed	0	%
Mass of specimen used in test	1500	g

Specimen after test

Vane shear strength, if measured		kPa
Bulk density	1.85	Mg/m ³
Dry density	1.37	Mg/m ³

Moisture Content

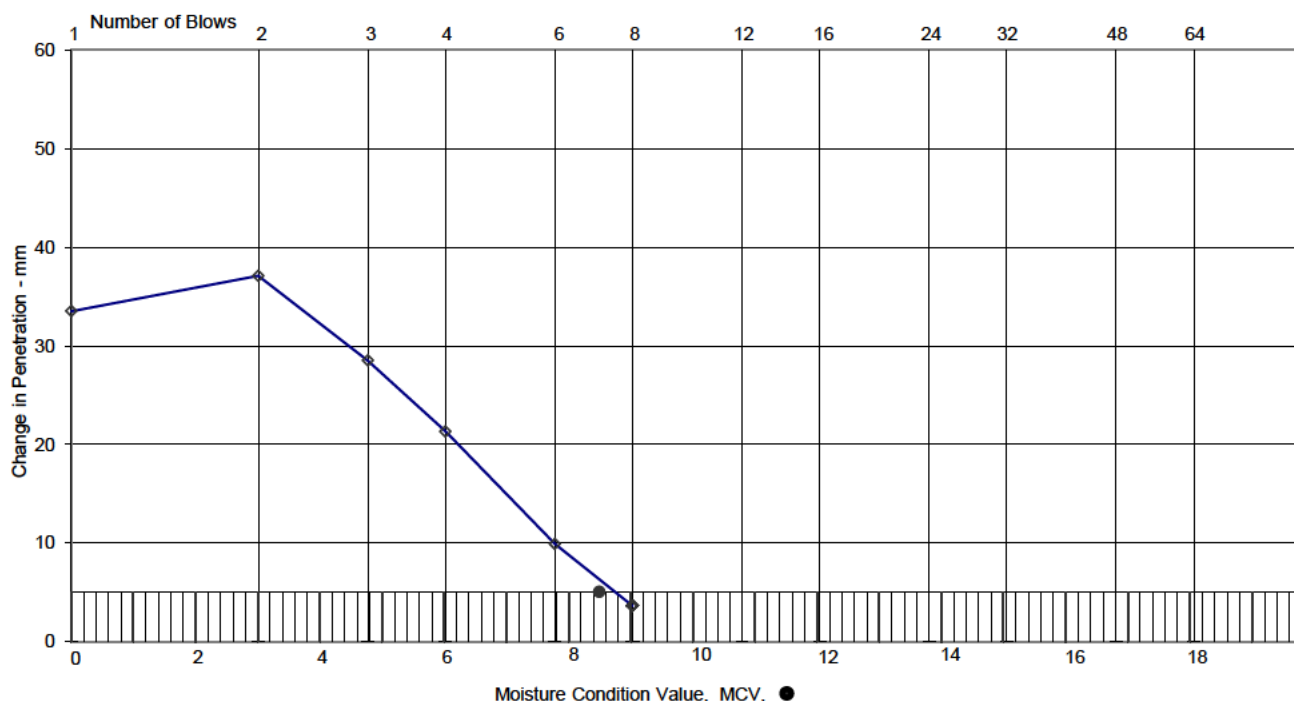
35.0 %

Moisture Condition Value, MCV

9.0

Method of interpretation

Steepest straight line



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MOISTURE CONDITION VALUE (MCV) TEST

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-14
	A9031-1920191213110749	Sample Depth (m BGL)	0.50 - 1.00
		Sample Type and No	B3
		Specimen Ref	

Soil Description	Brown slightly sandy CLAY.
Preparation procedure and Remarks	BS1377:Part 1 and Part 4, clause 5.4 at natural moisture content

Test Data

Blows n	Penetration/ protrusion mm	Change in Penetration n to 4n mm
1	128.7	28.0
2	112.4	21.6
3	104.8	18.2
4	100.6	15.9
6	94.3	13.7
8	90.8	11.8
12	86.5	8.1
16	84.8	6.7
24	80.7	2.7
32	78.9	
48	78.4	
64	78.1	
96	77.9	
128		
192		
256		

Equipment

Mould diameter	100	mm
Height of drop	250	mm
Mass of rammer	7	kg

Sample data

Retained on 20mm sieve, removed	0	%
Mass of specimen used in test	1500	g

Specimen after test

Vane shear strength, if measured	112	kPa
Bulk density	1.53	Mg/m ³
Dry density	1.26	Mg/m ³

Moisture Content

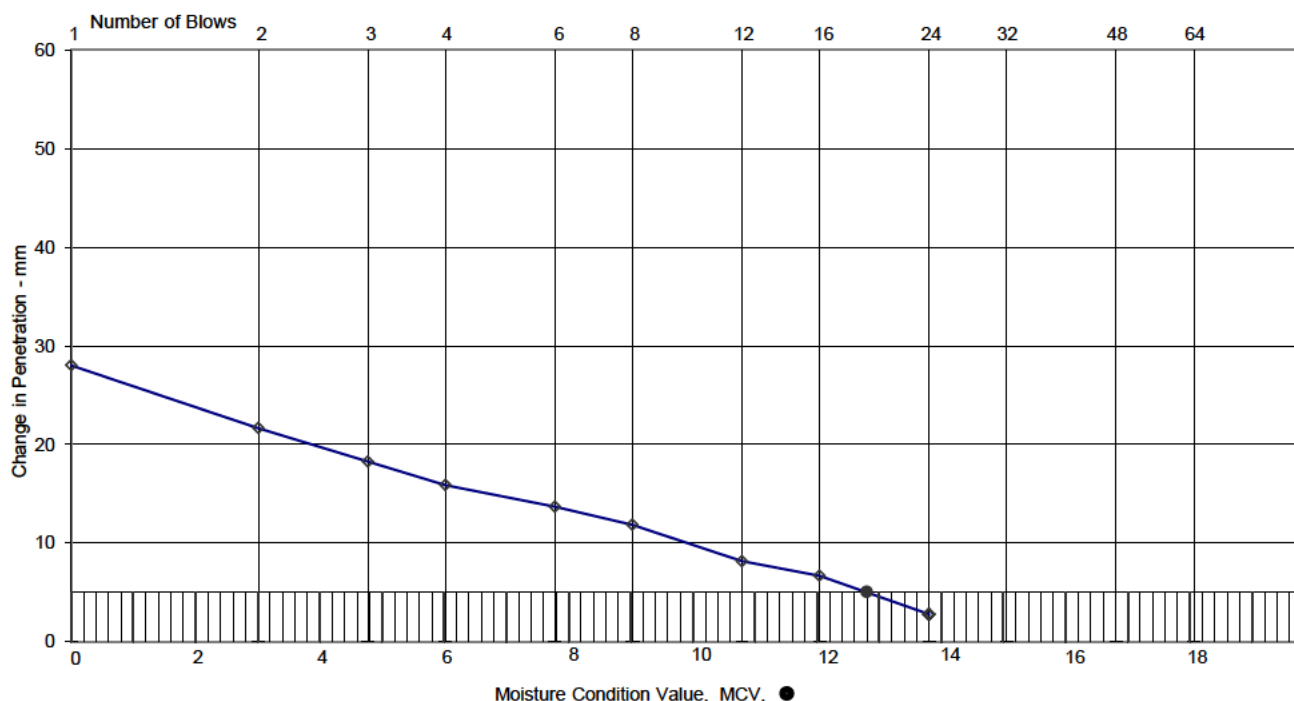
21.0 %

Moisture Condition Value, MCV

13.0

Method of interpretation

Steepest straight line



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MOISTURE CONDITION VALUE (MCV) TEST

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-15
	A9031-1920191212110228	Sample Depth (m BGL)	0.50 - 0.80
		Sample Type and No	B4
		Specimen Ref	

Soil Description	Brown slightly sandy CLAY.
Preparation procedure and Remarks	BS1377:Part 1 and Part 4, clause 5.4 at natural moisture content

Test Data

Blows n	Penetration/ protrusion mm	Change in Penetration n to 4n mm
1	117.3	34.0
2	101.8	43.6
3	89.5	35.0
4	83.3	29.2
6	70.0	15.8
8	58.2	4.8
12	54.5	
16	54.2	
24	54.1	
32	53.4	
48		
64		
96		
128		
192		
256		

Equipment

Mould diameter	100	mm
Height of drop	250	mm
Mass of rammer	7	kg

Sample data

Retained on 20mm sieve, removed	0	%
Mass of specimen used in test	1500	g

Specimen after test

Vane shear strength, if measured	34	kPa
Bulk density	1.88	Mg/m ³
Dry density	1.37	Mg/m ³

Moisture Content

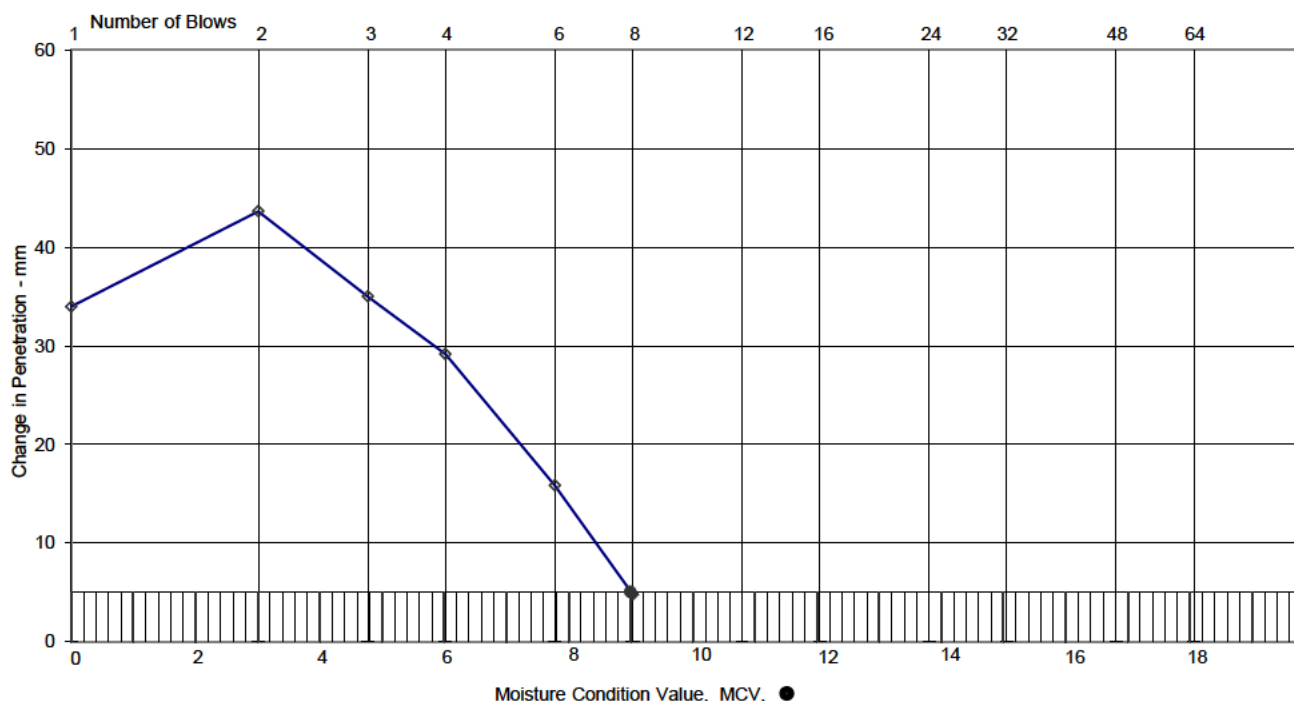
38.0 %

Moisture Condition Value, MCV

9.0

Method of interpretation

Steepest straight line



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MOISTURE CONDITION VALUE (MCV) TEST

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-16
	A9031-1920191219120110	Sample Depth (m BGL)	3.50 - 4.00
		Sample Type and No	B8
		Specimen Ref	

Soil Description	
Preparation procedure and Remarks	BS1377:Part 1 and Part 4, clause 5.4 at natural moisture content

Test Data

Blows n	Penetration/ protrusion mm	Change in Penetration n to 4n mm
1	97.0	29.7
2	81.2	26.9
3	75.9	28.7
4	67.3	20.3
6	55.3	8.7
8	54.3	7.9
12	47.2	1.4
16	47.0	
24	46.6	
32	46.4	
48	45.8	
64		
96		
128		
192		
256		

Equipment

Mould diameter	100	mm
Height of drop	250	mm
Mass of rammer	7	kg

Sample data

Retained on 20mm sieve, removed	0	%
Mass of specimen used in test	1500	g

Specimen after test

Vane shear strength, if measured	30	kPa
Bulk density	1.55	Mg/m ³
Dry density	1.22	Mg/m ³

Moisture Content

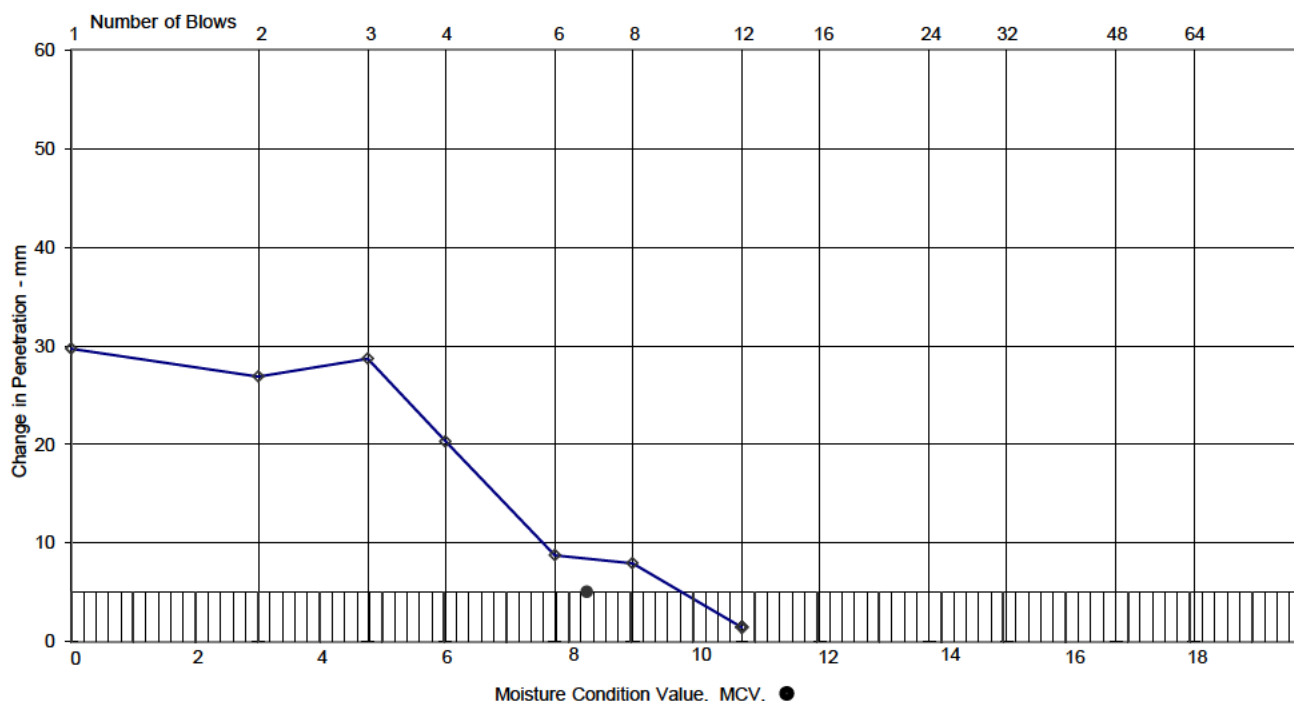
27.0 %

Moisture Condition Value, MCV

8.0

Method of interpretation

Steepest straight line



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MOISTURE CONDITION VALUE (MCV) TEST

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-16
	A9031-1920191219022241	Sample Depth (m BGL)	5.50 - 6.00
		Sample Type and No	B16
		Specimen Ref	

Soil Description	Brown slightly sandy CLAY.
Preparation procedure and Remarks	BS1377:Part 1 and Part 4, clause 5.4 at natural moisture content

Test Data

Blows n	Penetration/ protrusion mm	Change in Penetration n to 4n mm
1	113.0	25.4
2	101.7	26.5
3	92.9	26.1
4	87.6	25.3
6	79.7	26.1
8	75.2	26.2
12	66.8	22.0
16	62.3	18.1
24	53.6	9.7
32	49.0	5.5
48	44.8	
64	44.2	
96	43.9	
128	43.5	
192		
256		

Equipment

Mould diameter	100	mm
Height of drop	250	mm
Mass of rammer	7	kg

Sample data

Retained on 20mm sieve, removed	0	%
Mass of specimen used in test	1500	g

Specimen after test

Vane shear strength, if measured	140	kPa
Bulk density	2.09	Mg/m3
Dry density	1.76	Mg/m3

Moisture Content

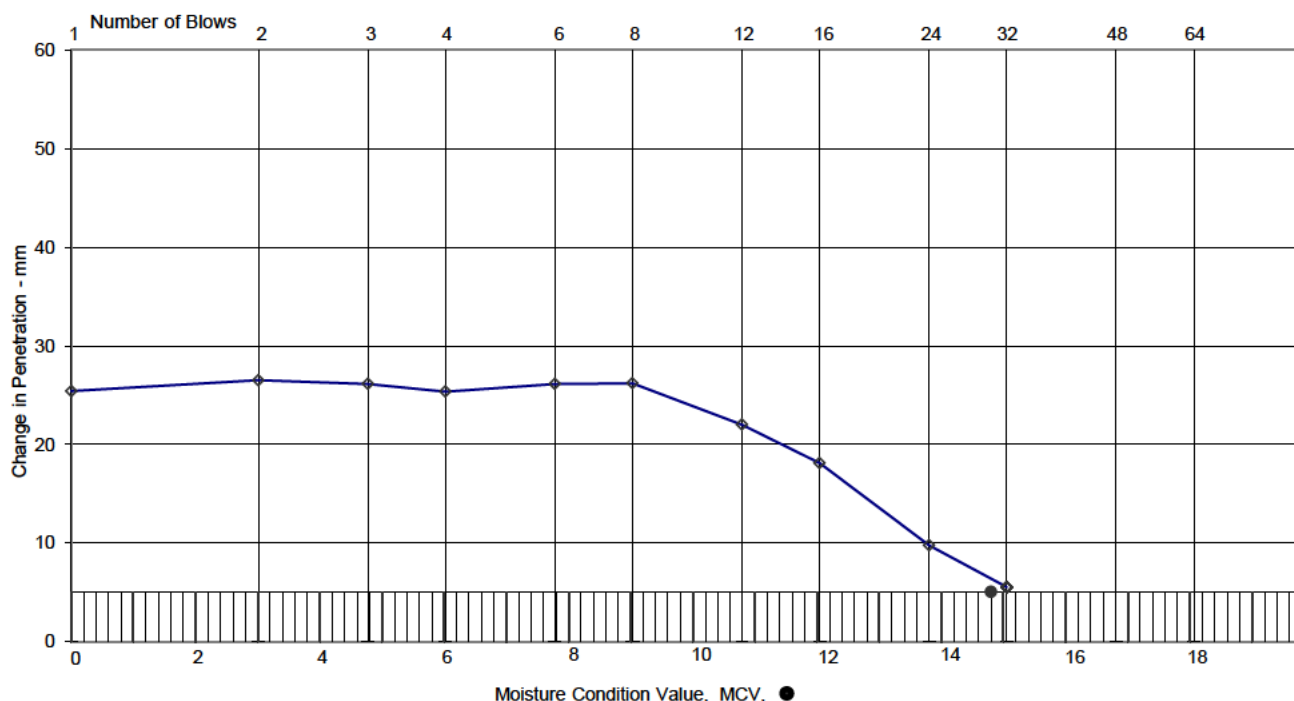
19.0 %

Moisture Condition Value, MCV

15.0

Method of interpretation

Steepest straight line



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MOISTURE CONDITION VALUE (MCV) TEST

Sample Details:	SAMPLE ID:	Hole No	ATK-TP-01
	A9031-1920191114114654	Sample Depth (m BGL)	1.00 - 1.20
		Sample Type and No	B8
		Specimen Ref	

Soil Description	Brown slightly sandy silty CLAY.
Preparation procedure and Remarks	BS1377:Part 1 and Part 4, clause 5.4 at natural moisture content

Test Data

Blows n	Penetration/ protrusion mm	Change in Penetration n to 4n mm
1	117.5	33.7
2	102.4	34.3
3	91.8	34.6
4	83.8	29.2
6	74.2	20.0
8	68.1	13.9
12	57.2	3.2
16	54.6	
24	54.2	
32	54.2	
48	54.0	
64		
96		
128		
192		
256		

Equipment

Mould diameter	100	mm
Height of drop	250	mm
Mass of rammer	7	kg

Sample data

Retained on 20mm sieve, removed	0	%
Mass of specimen used in test	1500	g

Specimen after test

Vane shear strength, if measured	40	kPa
Bulk density	1.82	Mg/m ³
Dry density	1.35	Mg/m ³

Moisture Content

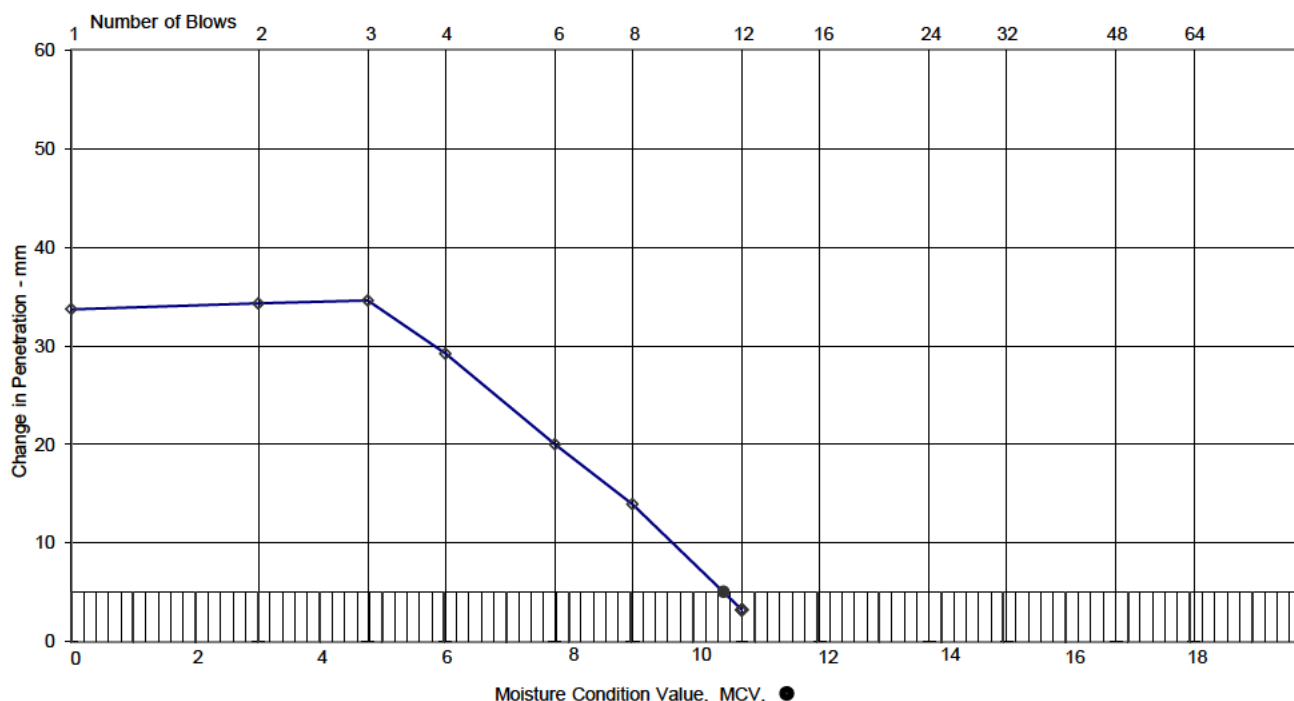
35.0 %

Moisture Condition Value, MCV

11.0

Method of interpretation

Steepest straight line



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MOISTURE CONDITION VALUE (MCV) TEST

Sample Details:	SAMPLE ID:	Hole No	ATK-TP-01
	A9031-1920191114114711	Sample Depth (m BGL)	2.80 - 2.90
		Sample Type and No	B12
		Specimen Ref	

Soil Description	Brown slightly sandy CLAY.
Preparation procedure and Remarks	BS1377:Part 1 and Part 4, clause 5.4 at natural moisture content

Test Data

Blows n	Penetration/ protrusion mm	Change in Penetration n to 4n mm
1	124.5	24.3
2	114.2	25.4
3	106.9	27.6
4	100.2	24.7
6	93.1	22.9
8	88.8	19.5
12	79.3	10.8
16	75.5	7.9
24	70.2	3.0
32	69.3	
48	68.5	
64	67.6	
96	67.2	
128		
192		
256		

Equipment

Mould diameter	100	mm
Height of drop	250	mm
Mass of rammer	7	kg

Sample data

Retained on 20mm sieve, removed	0	%
Mass of specimen used in test	1500	g

Specimen after test

Vane shear strength, if measured	90	kPa
Bulk density	1.62	Mg/m ³
Dry density	1.24	Mg/m ³

Moisture Content

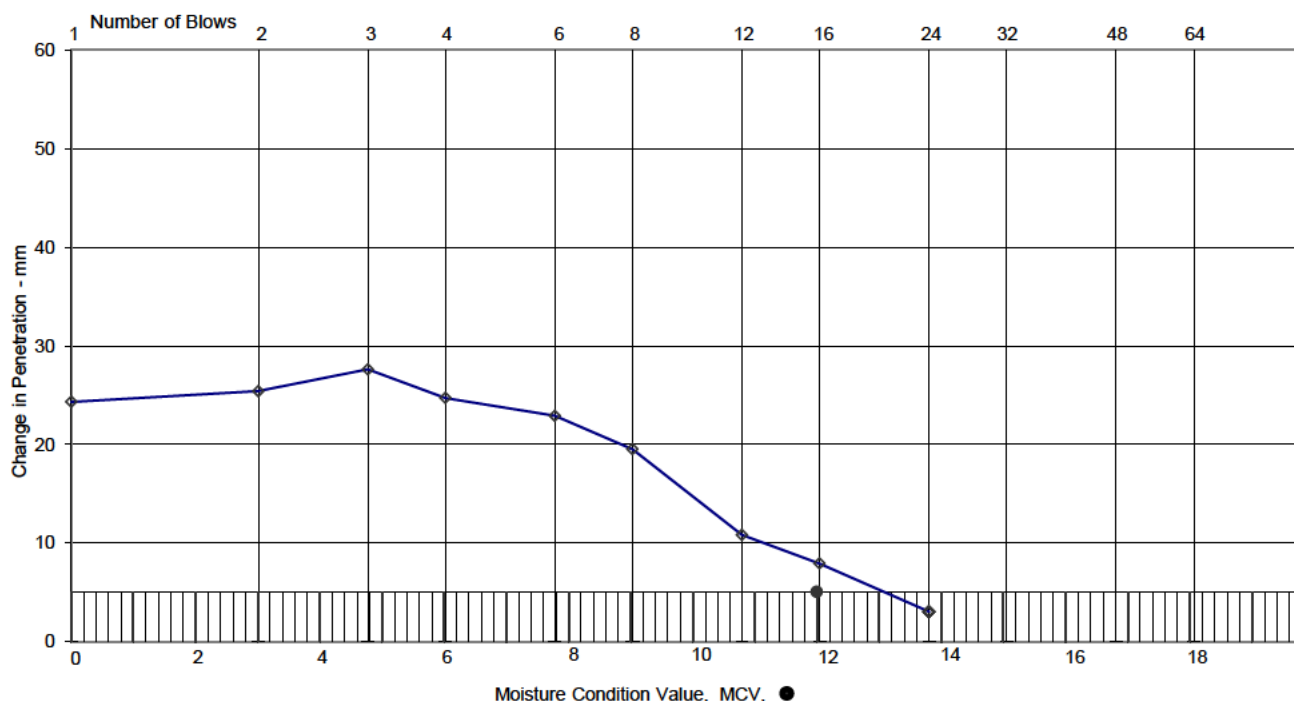
31.0 %

Moisture Condition Value, MCV

12.0

Method of interpretation

Steepest straight line



QA Ref
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Project No A9031-19
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Figure
MCV

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MOISTURE CONDITION VALUE (MCV) TEST

Sample Details:	SAMPLE ID:	Hole No	ATK-TP-01
	A9031-1920191114114717	Sample Depth (m BGL)	3.00 - 3.10
		Sample Type and No	B14
		Specimen Ref	

Soil Description	Brown slightly sandy CLAY.
Preparation procedure and Remarks	BS1377:Part 1 and Part 4, clause 5.4 at natural moisture content

Test Data

Blows n	Penetration/ protrusion mm	Change in Penetration n to 4n mm
1	119.9	31.6
2	105.5	32.4
3	96.4	25.2
4	88.3	17.2
6	78.3	7.3
8	73.1	2.2
12	71.2	
16	71.1	
24	71.0	
32	70.9	
48		
64		
96		
128		
192		
256		

Equipment

Mould diameter	100	mm
Height of drop	250	mm
Mass of rammer	7	kg

Sample data

Retained on 20mm sieve, removed	0	%
Mass of specimen used in test	1500	g

Specimen after test

Vane shear strength, if measured	52	kPa
Bulk density	1.57	Mg/m ³
Dry density	1.19	Mg/m ³

Moisture Content

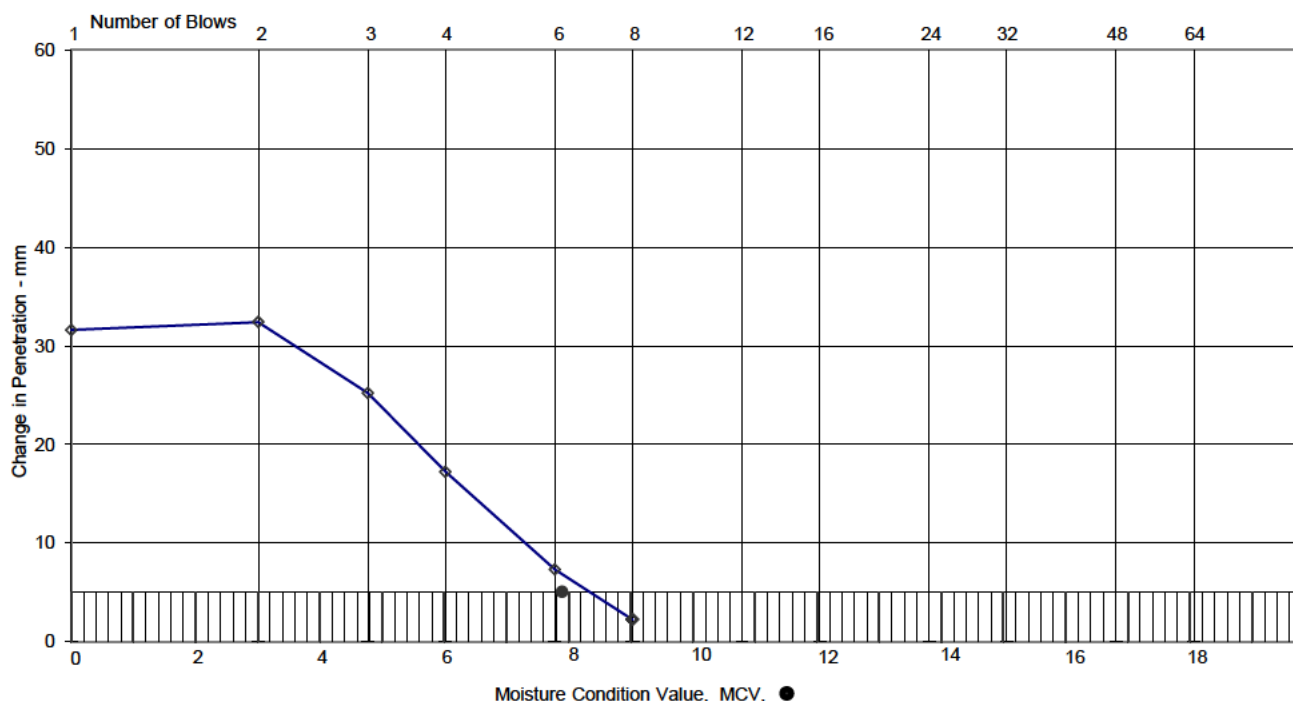
31.0 %

Moisture Condition Value, MCV

8.0

Method of interpretation

Steepest straight line



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MOISTURE CONDITION VALUE (MCV) TEST

Sample Details:	SAMPLE ID:	Hole No	ATK-TP-02
	A9031-1920191113101600	Sample Depth (m BGL)	0.50 - 0.70
		Sample Type and No	B3
		Specimen Ref	

Soil Description	Brown slightly sandy CLAY
Preparation procedure and Remarks	BS1377:Part 1 and Part 4, clause 5.4 at natural moisture content

Test Data

Blows n	Penetration/ protrusion mm	Change in Penetration n to 4n mm
1	113.7	34.3
2	99.3	40.4
3	89.0	33.9
4	79.4	25.0
6	64.7	10.4
8	58.9	4.8
12	55.1	
16	54.4	
24	54.4	
32	54.1	
48		
64		
96		
128		
192		
256		

Equipment

Mould diameter	100	mm
Height of drop	250	mm
Mass of rammer	7	kg

Sample data

Retained on 20mm sieve, removed	0	%
Mass of specimen used in test	1500	g

Specimen after test

Vane shear strength, if measured	54	kPa
Bulk density	1.85	Mg/m ³
Dry density	1.36	Mg/m ³

Moisture Content

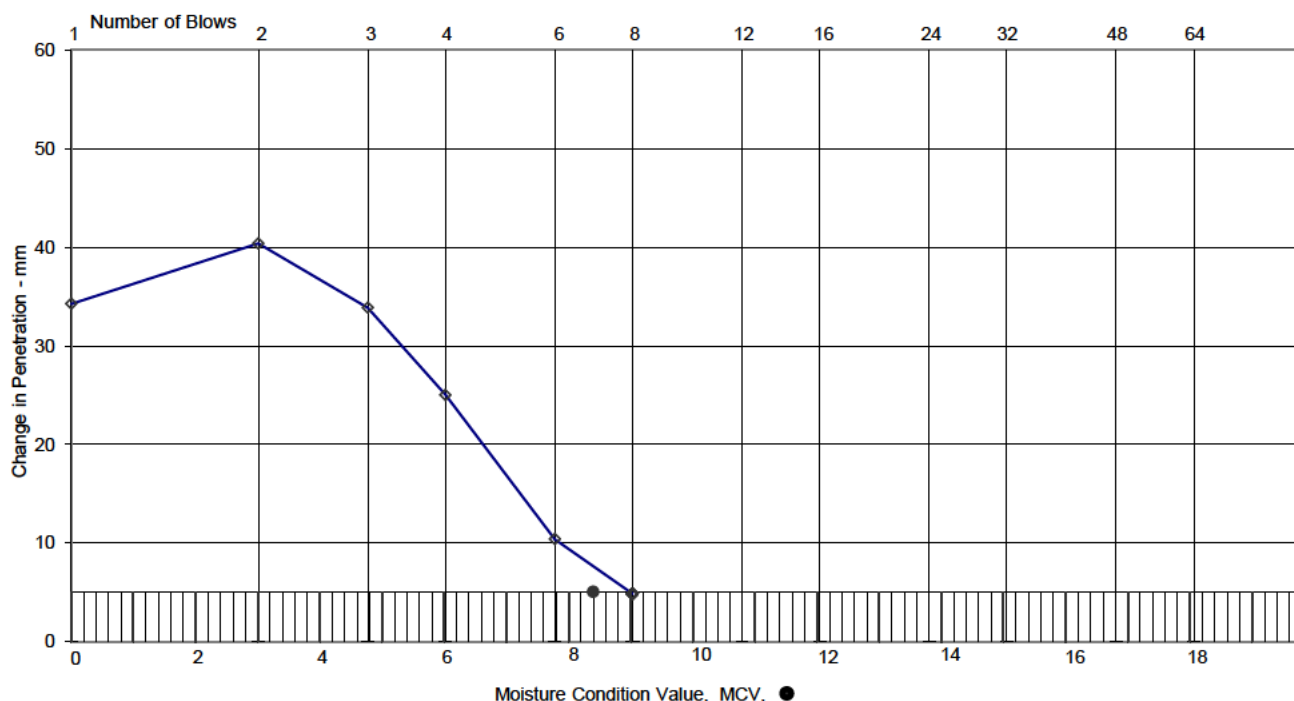
37.0 %

Moisture Condition Value, MCV

8.0

Method of interpretation

Steepest straight line



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MOISTURE CONDITION VALUE (MCV) TEST

Sample Details:	SAMPLE ID:	Hole No	ATK-TP-02
	A9031-1920191113101637	Sample Depth (m BGL)	2.20 - 2.40
		Sample Type and No	B8
		Specimen Ref	

Soil Description	Brown slightly sandy slightly gravelly CLAY.
Preparation procedure and Remarks	BS1377:Part 1 and Part 4, clause 5.4 at natural moisture content

Test Data

Blows n	Penetration/ protrusion mm	Change in Penetration n to 4n mm
1	112.2	35.1
2	95.0	36.3
3	85.0	33.0
4	77.0	25.6
6	66.1	14.9
8	58.7	7.7
12	52.0	1.4
16	51.5	
24	51.2	
32	51.1	
48	50.6	
64		
96		
128		
192		
256		

Equipment

Mould diameter	100	mm
Height of drop	250	mm
Mass of rammer	7	kg

Sample data

Retained on 20mm sieve, removed	0	%
Mass of specimen used in test	1500	g

Specimen after test

Vane shear strength, if measured	40	kPa
Bulk density	1.97	Mg/m ³
Dry density	1.50	Mg/m ³

Moisture Content

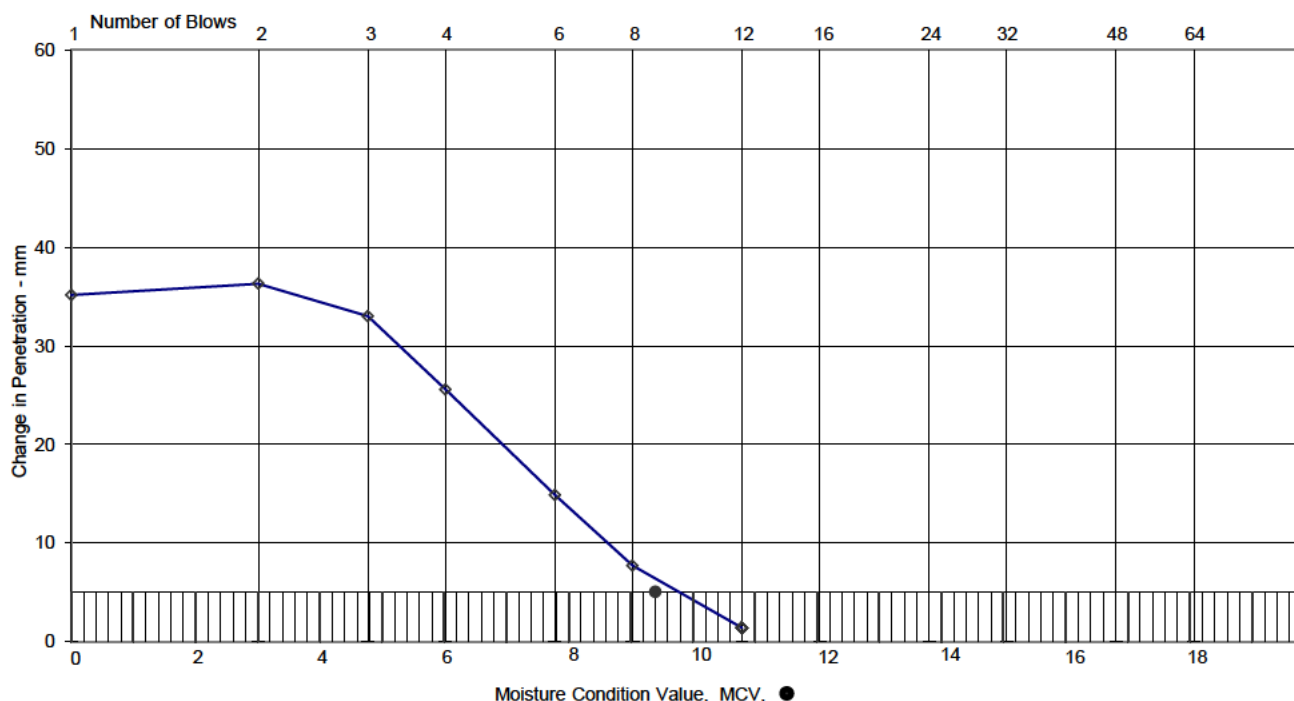
31.0 %

Moisture Condition Value, MCV

9.0

Method of interpretation

Steepest straight line



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MOISTURE CONDITION VALUE (MCV) TEST

Sample Details:	SAMPLE ID:	Hole No	ATK-TP-03
	A9031-1920191115080831	Sample Depth (m BGL)	0.50 - 0.60
		Sample Type and No	B4
		Specimen Ref	

Soil Description	Brown slightly sandy slightly gravelly CLAY.
Preparation procedure and Remarks	BS1377:Part 1 and Part 4, clause 5.4 at natural moisture content

Test Data

Blows n	Penetration/ protrusion mm	Change in Penetration n to 4n mm
1	117.7	37.9
2	99.2	42.6
3	90.6	39.3
4	79.9	28.6
6	66.7	16.1
8	56.6	6.4
12	51.3	2.1
16	51.2	
24	50.6	
32	50.2	
48	49.2	
64		
96		
128		
192		
256		

Equipment

Mould diameter	100	mm
Height of drop	250	mm
Mass of rammer	7	kg

Sample data

Retained on 20mm sieve, removed	0	%
Mass of specimen used in test	1500	g

Specimen after test

Vane shear strength, if measured	28	kPa
Bulk density	1.95	Mg/m ³
Dry density	1.49	Mg/m ³

Moisture Content

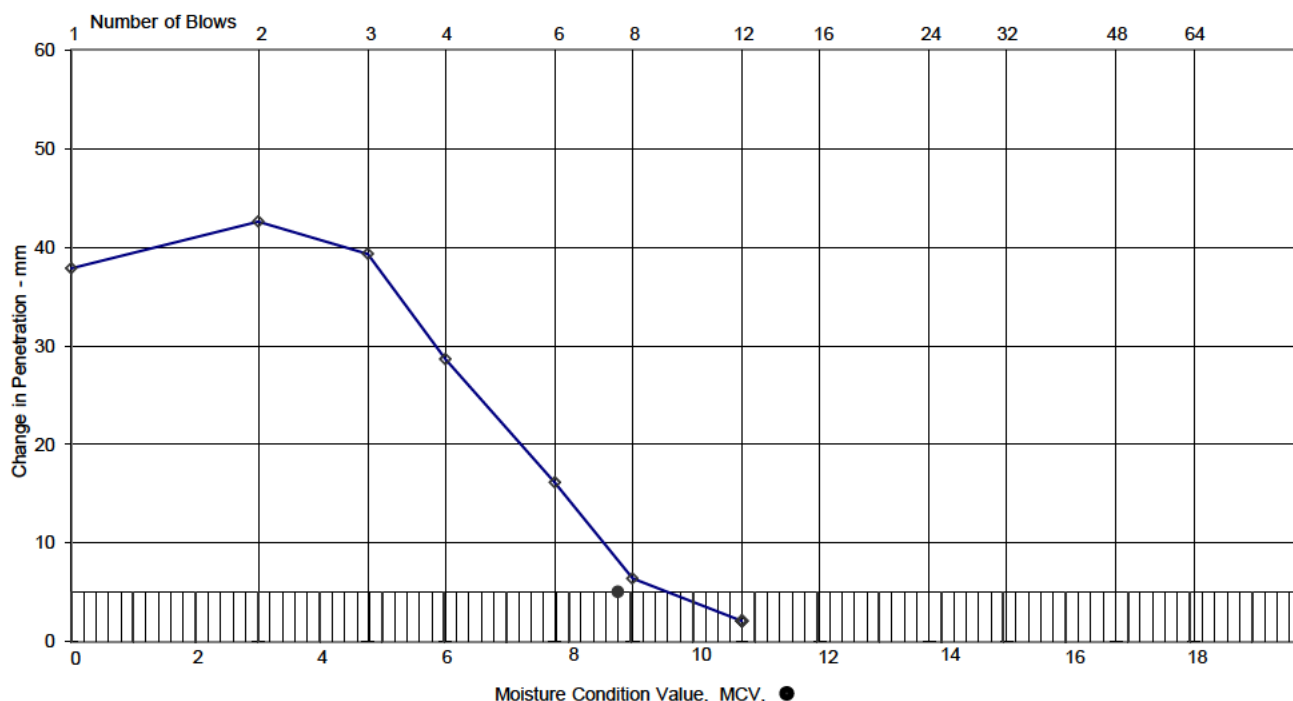
31.0 %

Moisture Condition Value, MCV

9.0

Method of interpretation

Steepest straight line



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MOISTURE CONDITION VALUE (MCV) TEST

Sample Details:	SAMPLE ID:	Hole No	ATK-TP-03
	A9031-1920191115080841	Sample Depth (m BGL)	0.90 - 1.00
		Sample Type and No	B6
		Specimen Ref	

Soil Description	Brown slightly sandy CLAY.
Preparation procedure and Remarks	BS1377:Part 1 and Part 4, clause 5.4 at natural moisture content

Test Data

Blows n	Penetration/ protrusion mm	Change in Penetration n to 4n mm
1	124.5	34.7
2	101.3	35.6
3	97.2	39.0
4	89.8	32.1
6	75.7	18.3
8	65.7	8.8
12	58.2	1.5
16	57.7	
24	57.4	
32	56.9	
48	56.7	
64		
96		
128		
192		
256		

Equipment

Mould diameter	100	mm
Height of drop	250	mm
Mass of rammer	7	kg

Sample data

Retained on 20mm sieve, removed	0	%
Mass of specimen used in test	1500	g

Specimen after test

Vane shear strength, if measured	32	kPa
Bulk density	1.73	Mg/m ³
Dry density	1.29	Mg/m ³

Moisture Content

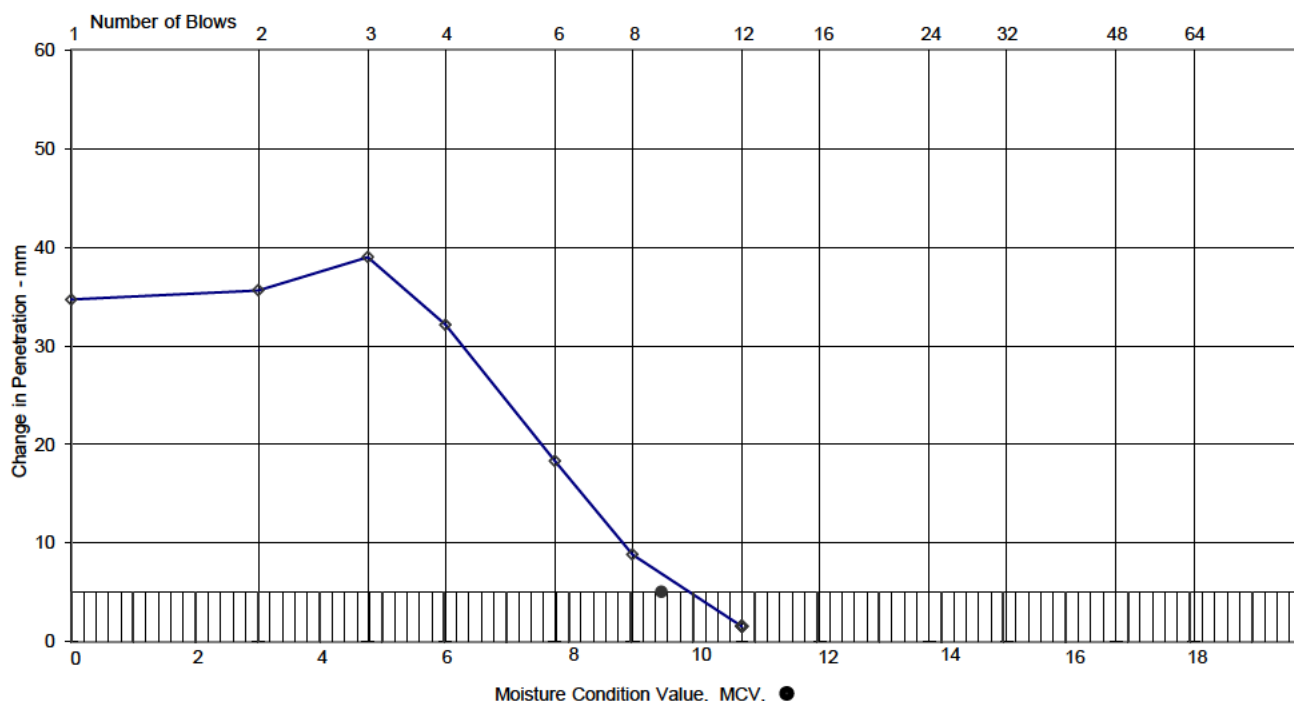
34.0 %

Moisture Condition Value, MCV

10.0

Method of interpretation

Steepest straight line



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MOISTURE CONDITION VALUE (MCV) TEST

Sample Details:	SAMPLE ID:	Hole No	ATK-TP-03
	A9031-1920191115080910	Sample Depth (m BGL)	3.10 - 3.20
		Sample Type and No	B13
		Specimen Ref	

Soil Description	Dark grey slightly sandy CLAY.
Preparation procedure and Remarks	BS1377:Part 1 and Part 4, clause 5.4 at natural moisture content

Test Data

Blows n	Penetration/ protrusion mm	Change in Penetration n to 4n mm
1	115.0	39.2
2	95.7	40.6
3	86.6	38.0
4	75.7	30.1
6	63.1	17.6
8	55.1	9.7
12	48.6	3.7
16	45.6	
24	45.6	
32	45.5	
48	44.9	
64		
96		
128		
192		
256		

Equipment

Mould diameter	100	mm
Height of drop	250	mm
Mass of rammer	7	kg

Sample data

Retained on 20mm sieve, removed	0	%
Mass of specimen used in test	1500	g

Specimen after test

Vane shear strength, if measured		kPa
Bulk density	1.99	Mg/m3
Dry density	1.55	Mg/m3

Moisture Content

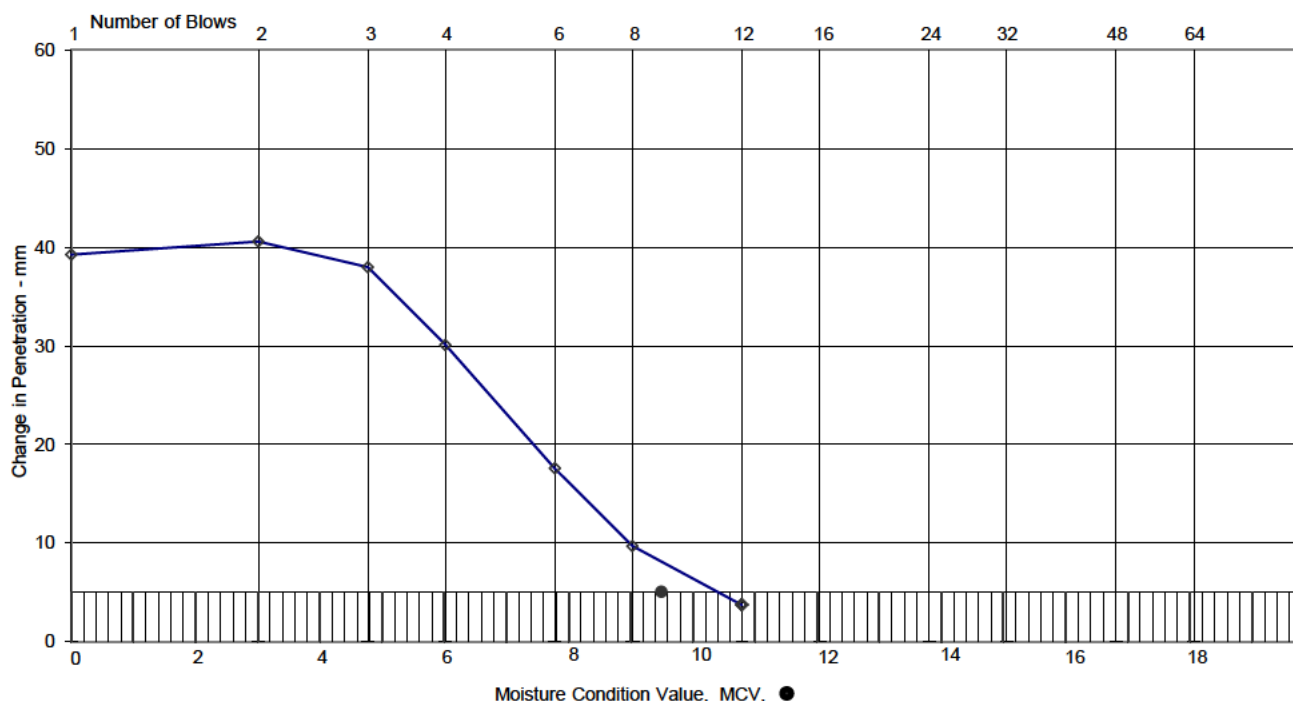
28.0 %

Moisture Condition Value, MCV

10.0

Method of interpretation

Steepest straight line



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MOISTURE CONDITION VALUE (MCV) TEST

Sample Details:	SAMPLE ID:	Hole No	ATK-TP-04
	A9031-1920191127041354	Sample Depth (m BGL)	0.30 - 0.40
		Sample Type and No	B3
		Specimen Ref	

Soil Description	Brown slightly sandy slightly gravelly CLAY.
Preparation procedure and Remarks	BS1377:Part 1 and Part 4, clause 5.4 at natural moisture content

Test Data

Blows n	Penetration/ protrusion mm	Change in Penetration n to 4n mm
1	63.8	8.5
2	58.0	6.2
3	55.6	4.9
4	55.3	
6	52.5	
8	51.8	
12	50.7	
16		
24		
32		
48		
64		
96		
128		
192		
256		

Equipment

Mould diameter	100	mm
Height of drop	250	mm
Mass of rammer	7	kg

Sample data

Retained on 20mm sieve, removed	0	%
Mass of specimen used in test	1500	g

Specimen after test

Vane shear strength, if measured	6	kPa
Bulk density	1.80	Mg/m ³
Dry density	1.31	Mg/m ³

Moisture Content

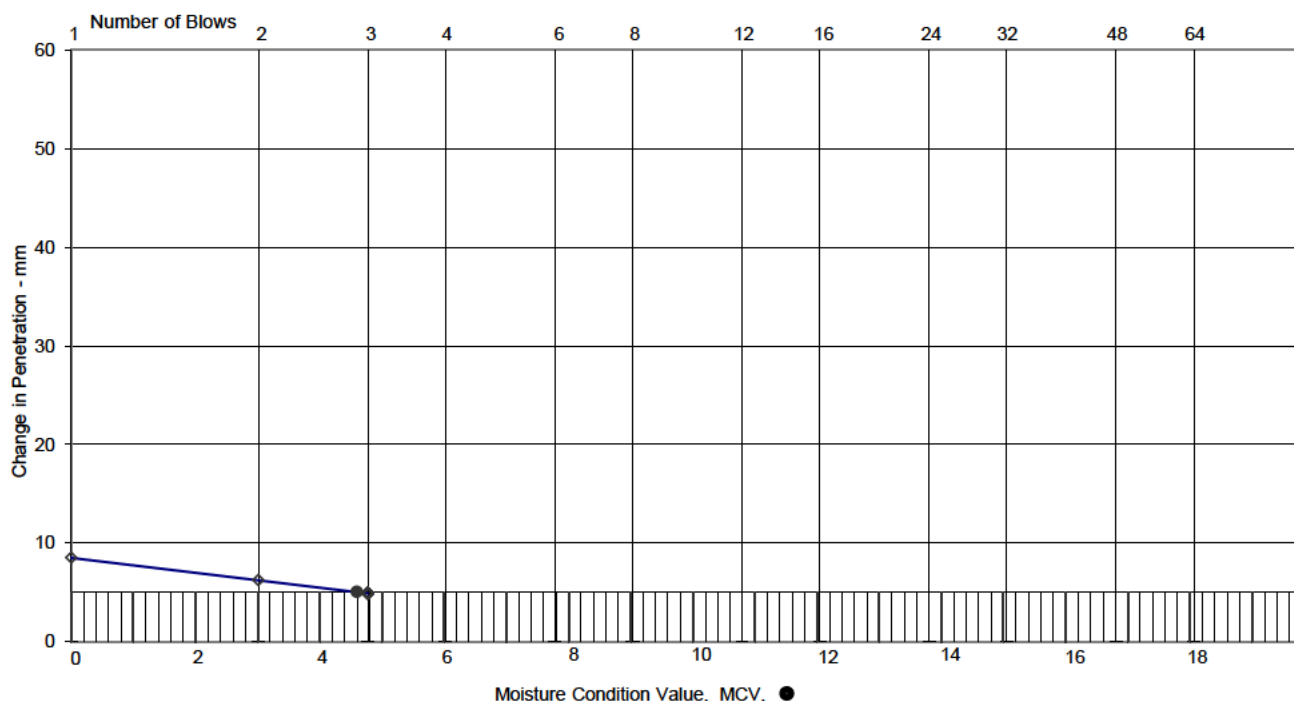
38.0 %

Moisture Condition Value, MCV

5.0

Method of interpretation

Steepest straight line



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MOISTURE CONDITION VALUE (MCV) TEST

Sample Details:	SAMPLE ID:	Hole No	ATK-TP-04
	A9031-1920191127041439	Sample Depth (m BGL)	1.40 - 1.50
		Sample Type and No	B8
		Specimen Ref	

Soil Description	Brown slightly sandy CLAY.
Preparation procedure and Remarks	BS1377:Part 1 and Part 4, clause 5.4 at natural moisture content

Test Data

Blows n	Penetration/ protrusion mm	Change in Penetration n to 4n mm
1	117.8	32.9
2	102.6	32.6
3	92.1	37.6
4	84.9	33.8
6	73.4	22.8
8	70.0	19.8
12	54.5	4.4
16	51.1	
24	50.6	
32	50.2	
48	50.1	
64		
96		
128		
192		
256		

Equipment

Mould diameter	100	mm
Height of drop	250	mm
Mass of rammer	7	kg

Sample data

Retained on 20mm sieve, removed	0	%
Mass of specimen used in test	1500	g

Specimen after test

Vane shear strength, if measured	46	kPa
Bulk density	1.87	Mg/m3
Dry density	1.42	Mg/m3

Moisture Content

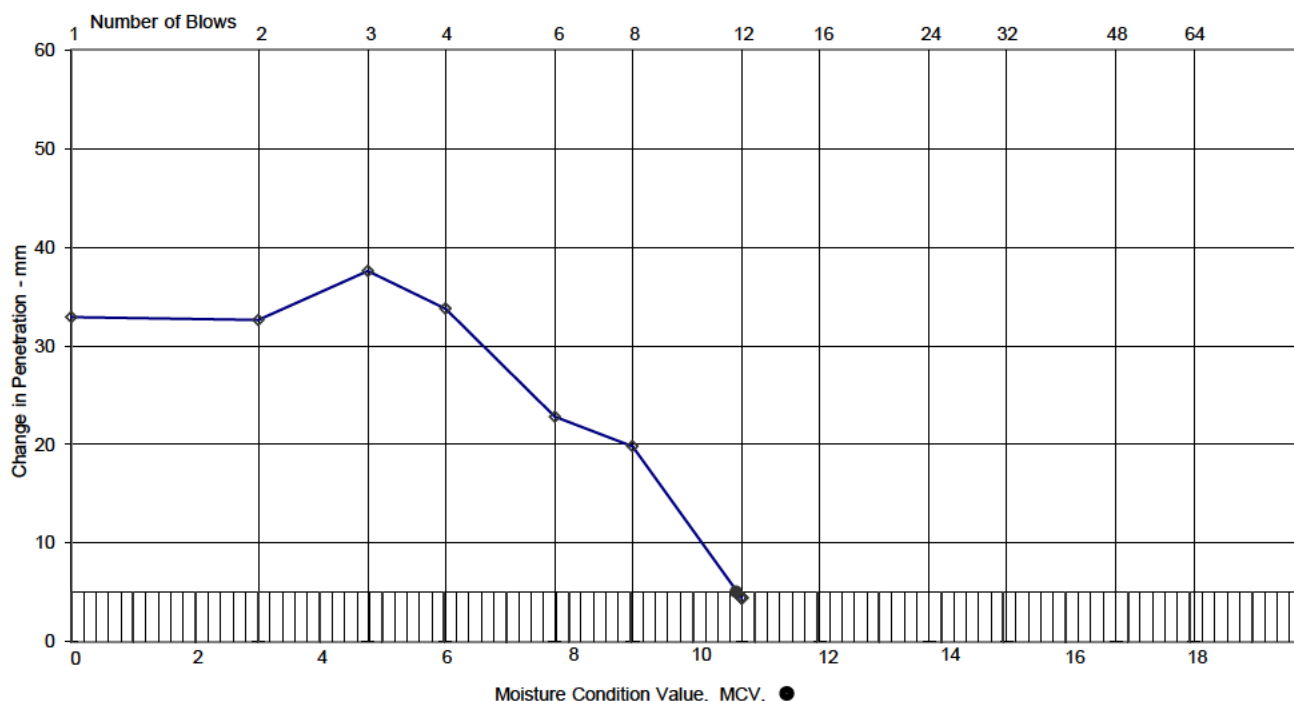
31.0 %

Moisture Condition Value, MCV

11.0

Method of interpretation

Steepest straight line



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MOISTURE CONDITION VALUE (MCV) TEST

Sample Details:	SAMPLE ID:	Hole No	ATK-TP-04
	A9031-1920191127041449	Sample Depth (m BGL)	1.80 - 2.00
		Sample Type and No	B10
		Specimen Ref	

Soil Description	Brown slightly sandy slightly gravelly CLAY.
Preparation procedure and Remarks	BS1377:Part 1 and Part 4, clause 5.4 at natural moisture content

Test Data

Blows n	Penetration/ protrusion mm	Change in Penetration n to 4n mm
1	120.0	38.8
2	100.8	39.2
3	89.5	38.9
4	81.2	35.0
6	70.9	24.8
8	61.6	15.9
12	50.6	4.9
16	46.2	
24	46.1	
32	45.8	
48	45.7	
64		
96		
128		
192		
256		

Equipment

Mould diameter	100	mm
Height of drop	250	mm
Mass of rammer	7	kg

Sample data

Retained on 20mm sieve, removed	0	%
Mass of specimen used in test	1500	g

Specimen after test

Vane shear strength, if measured	50	kPa
Bulk density	2.00	Mg/m ³
Dry density	1.60	Mg/m ³

Moisture Content

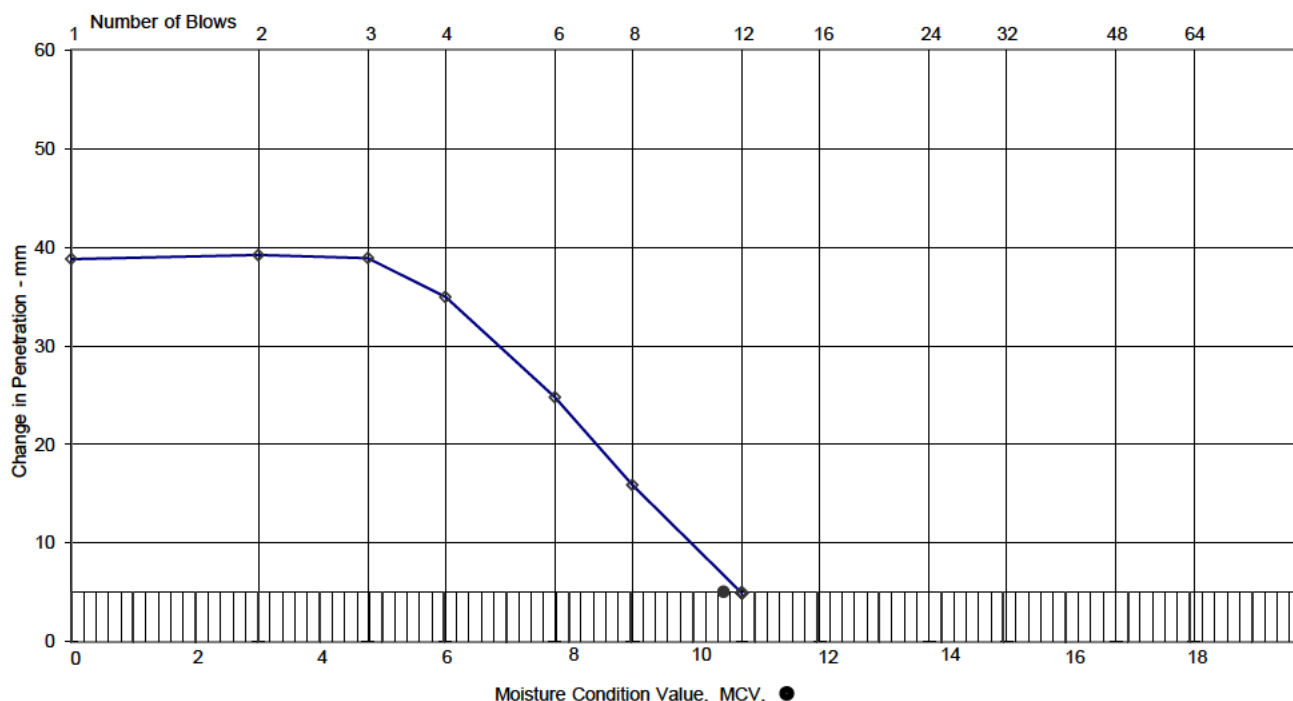
25.0 %

Moisture Condition Value, MCV

11.0

Method of interpretation

Steepest straight line



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MOISTURE CONDITION VALUE (MCV) TEST

Sample Details:	SAMPLE ID:	Hole No	ATK-TP-04
	A9031-1920191127041518	Sample Depth (m BGL)	3.00 - 3.10
		Sample Type and No	B12
		Specimen Ref	

Soil Description	Reddish brown mottled grey slightly sandy CLAY.
Preparation procedure and Remarks	BS1377:Part 1 and Part 4, clause 5.4 at natural moisture content

Test Data

Blows n	Penetration/ protrusion mm	Change in Penetration n to 4n mm
1	112.8	31.9
2	97.8	35.7
3	87.4	36.5
4	80.9	35.3
6	70.0	25.2
8	62.1	17.7
12	50.9	6.7
16	45.6	1.6
24	44.8	
32	44.4	
48	44.3	
64	44.0	
96		
128		
192		
256		

Equipment

Mould diameter	100	mm
Height of drop	250	mm
Mass of rammer	7	kg

Sample data

Retained on 20mm sieve, removed	0	%
Mass of specimen used in test	1500	g

Specimen after test

Vane shear strength, if measured	60	kPa
Bulk density	2.07	Mg/m ³
Dry density	1.65	Mg/m ³

Moisture Content

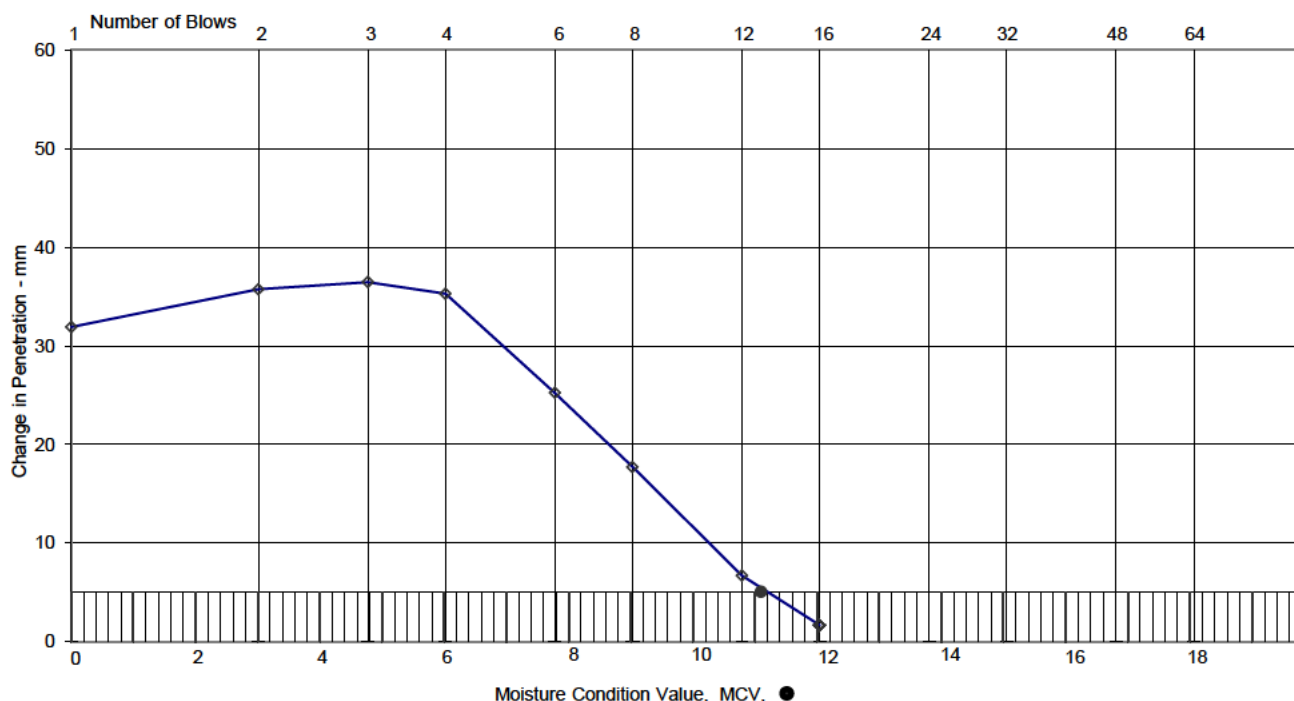
25.0 %

Moisture Condition Value, MCV

11.0

Method of interpretation

Steepest straight line



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MOISTURE CONDITION VALUE (MCV) TEST

Sample Details:	SAMPLE ID:	Hole No	ATK-TP-06
	A9031-1920191211040013	Sample Depth (m BGL)	0.30 - 0.80
		Sample Type and No	B4
		Specimen Ref	

Soil Description	Brown slightly sandy CLAY.
Preparation procedure and Remarks	BS1377:Part 1 and Part 4, clause 5.4 at natural moisture content

Test Data

Blows n	Penetration/ protrusion mm	Change in Penetration n to 4n mm
1	96.3	21.7
2	84.3	10.8
3	77.4	4.3
4	74.7	
6	73.9	
8	73.5	
12	73.1	
16		
24		
32		
48		
64		
96		
128		
192		
256		

Equipment

Mould diameter	100	mm
Height of drop	250	mm
Mass of rammer	7	kg

Sample data

Retained on 20mm sieve, removed	0	%
Mass of specimen used in test	1500	g

Specimen after test

Vane shear strength, if measured	22	kPa
Bulk density	1.58	Mg/m ³
Dry density	1.17	Mg/m ³

Moisture Content

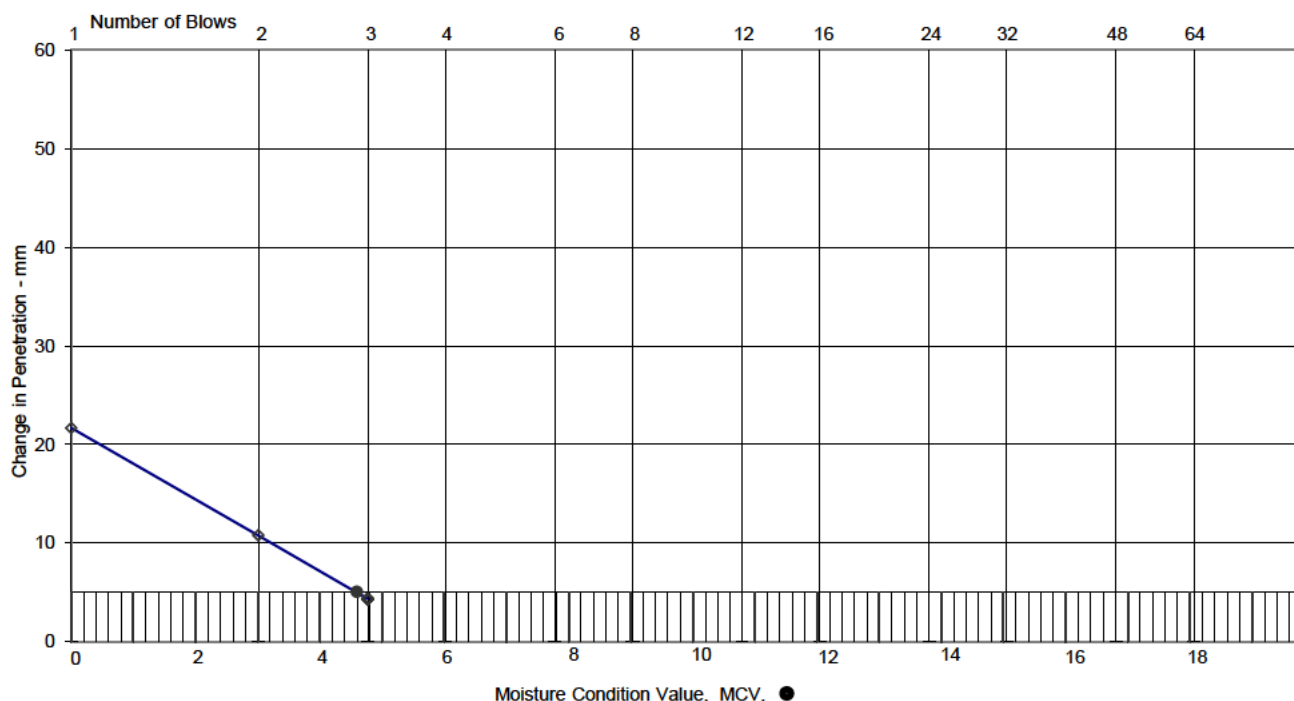
35.0 %

Moisture Condition Value, MCV

5.0

Method of interpretation

Steepest straight line



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MOISTURE CONDITION VALUE (MCV) TEST

Sample Details:	SAMPLE ID:	Hole No	ATK-TP-06
	A9031-1920191211040049	Sample Depth (m BGL)	0.90 - 1.20
		Sample Type and No	B8
		Specimen Ref	

Soil Description	Brown slightly sandy CLAY.
Preparation procedure and Remarks	BS1377:Part 1 and Part 4, clause 5.4 at natural moisture content

Test Data

Blows n	Penetration/ protrusion mm	Change in Penetration n to 4n mm
1	125.8	30.7
2	112.5	41.6
3	103.6	47.3
4	95.0	42.5
6	81.7	29.6
8	70.9	19.0
12	56.2	4.7
16	52.5	
24	52.1	
32	51.8	
48	51.5	
64		
96		
128		
192		
256		

Equipment

Mould diameter	100	mm
Height of drop	250	mm
Mass of rammer	7	kg

Sample data

Retained on 20mm sieve, removed	0	%
Mass of specimen used in test	1500	g

Specimen after test

Vane shear strength, if measured	48	kPa
Bulk density	1.85	Mg/m3
Dry density	1.37	Mg/m3

Moisture Content

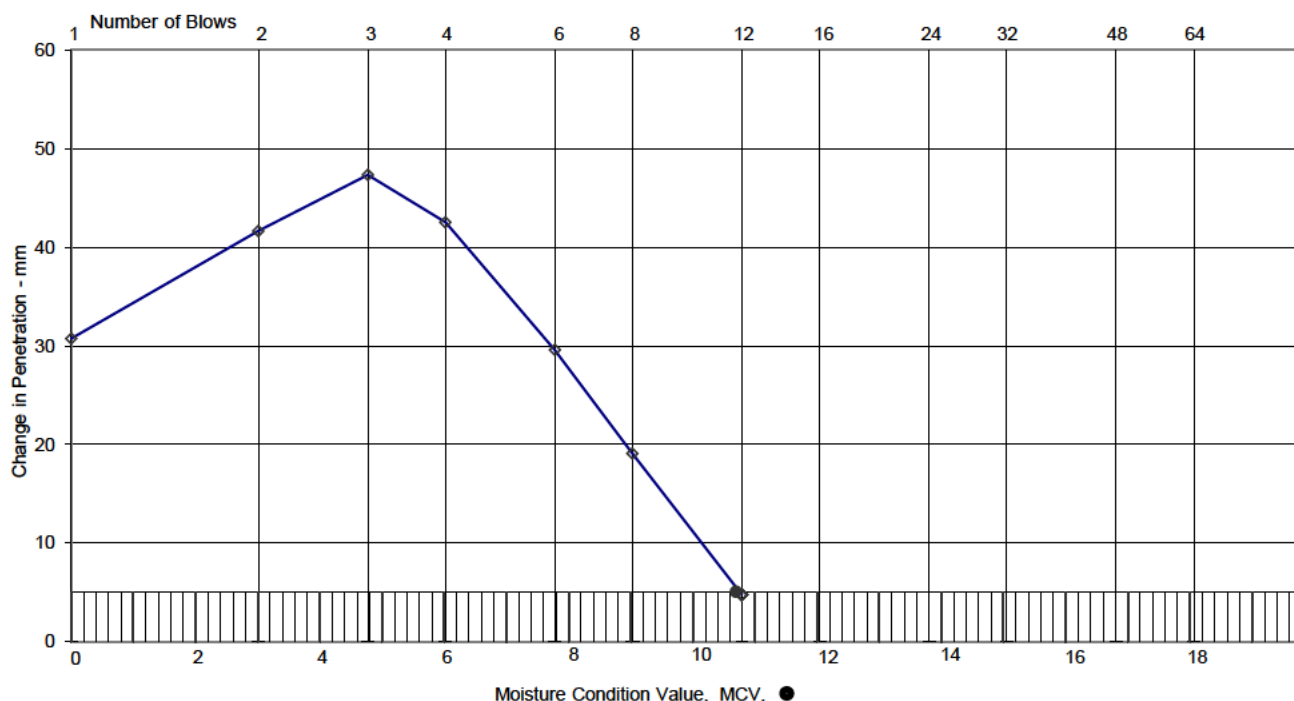
35.0 %

Moisture Condition Value, MCV

11.0

Method of interpretation

Steepest straight line



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MOISTURE CONDITION VALUE (MCV) TEST

Sample Details:	SAMPLE ID:	Hole No	ATK-TP-06
	A9031-1920191211040141	Sample Depth (m BGL)	2.00 - 2.40
		Sample Type and No	B11
		Specimen Ref	

Soil Description	Brown slightly sandy CLAY.
Preparation procedure and Remarks	BS1377:Part 1 and Part 4, clause 5.4 at natural moisture content

Test Data

Blows n	Penetration/ protrusion mm	Change in Penetration n to 4n mm
1	135.7	21.5
2	126.4	19.8
3	120.8	20.4
4	114.2	18.0
6	110.7	15.9
8	106.6	13.9
12	100.4	10.0
16	96.2	6.0
24	94.8	4.7
32	92.7	
48	90.4	
64	90.2	
96	90.1	
128		
192		
256		

Equipment

Mould diameter	100	mm
Height of drop	250	mm
Mass of rammer	7	kg

Sample data

Retained on 20mm sieve, removed	0	%
Mass of specimen used in test	1500	g

Specimen after test

Vane shear strength, if measured	32	kPa
Bulk density	1.39	Mg/m ³
Dry density	1.06	Mg/m ³

Moisture Content

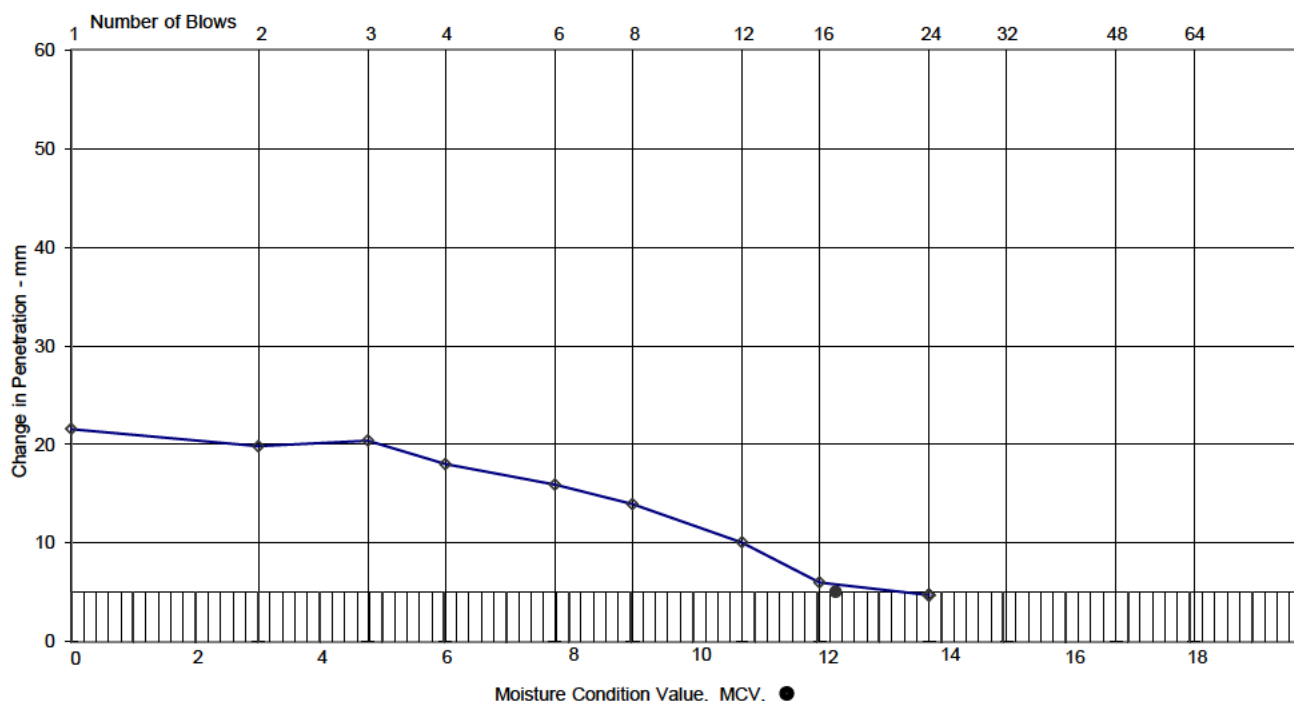
32.0 %

Moisture Condition Value, MCV

12.0

Method of interpretation

Steepest straight line



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MOISTURE CONDITION VALUE (MCV) TEST

Sample Details:	SAMPLE ID:	Hole No	ATK-TP-06
	A9031-1920191211040158	Sample Depth (m BGL)	3.00 - 3.50
		Sample Type and No	B13
		Specimen Ref	

Soil Description	Brown slightly sandy CLAY.
Preparation procedure and Remarks	BS1377:Part 1 and Part 4, clause 5.4 at natural moisture content

Test Data

Blows n	Penetration/ protrusion mm	Change in Penetration n to 4n mm
1	121.4	30.7
2	106.8	30.7
3	97.4	28.1
4	90.7	23.5
6	82.0	15.2
8	76.1	10.7
12	69.3	4.5
16	67.2	
24	66.8	
32	65.4	
48	64.8	
64		
96		
128		
192		
256		

Equipment

Mould diameter	100	mm
Height of drop	250	mm
Mass of rammer	7	kg

Sample data

Retained on 20mm sieve, removed	0	%
Mass of specimen used in test	1500	g

Specimen after test

Vane shear strength, if measured	78	kPa
Bulk density	1.68	Mg/m ³
Dry density	1.33	Mg/m ³

Moisture Content

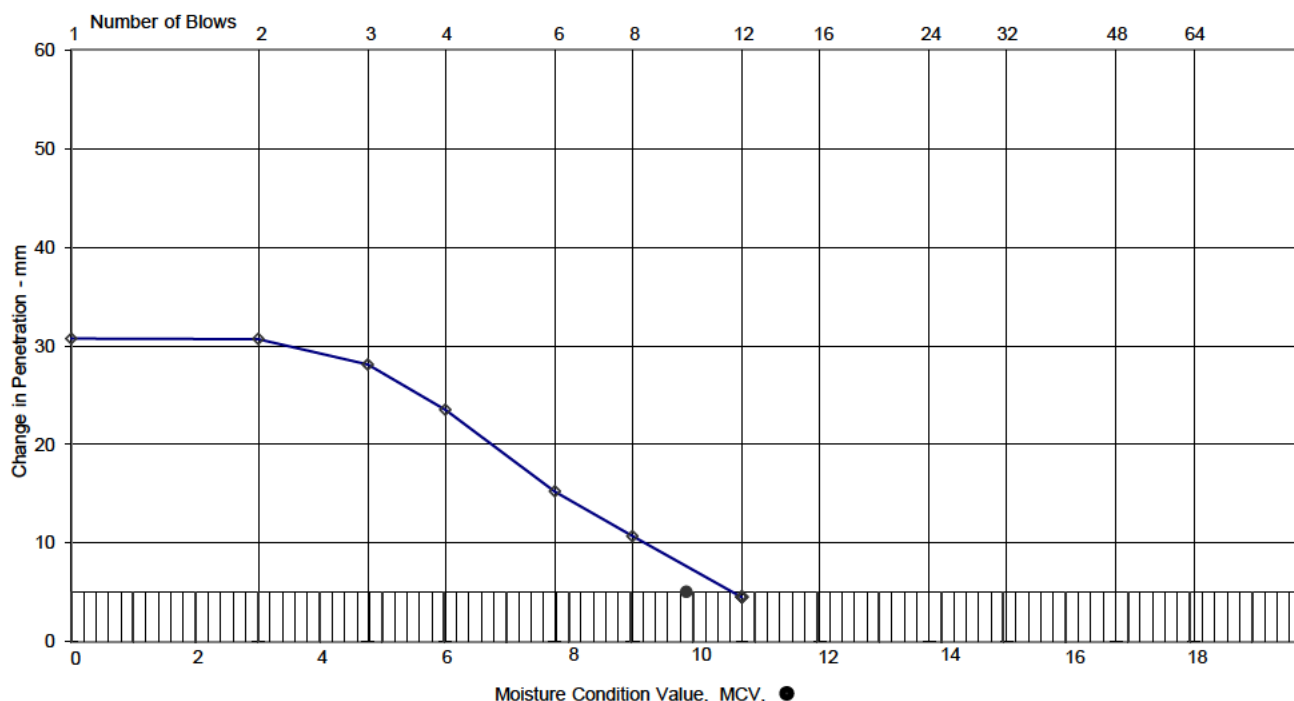
27.0 %

Moisture Condition Value, MCV

10.0

Method of interpretation

Steepest straight line



QA Ref
SLR 4, 5.4
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Project No A9031-19
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Figure
MCV

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MOISTURE CONDITION VALUE (MCV) TEST

Sample Details:	SAMPLE ID:	Hole No	ATK-TPM-03
	A9031-1920191204104300	Sample Depth (m BGL)	0.40 - 0.50
		Sample Type and No	B3A
		Specimen Ref	

Soil Description	Brown slightly sandy CLAY.
Preparation procedure and Remarks	BS1377:Part 1 and Part 4, clause 5.4 at natural moisture content

Test Data

Blows n	Penetration/ protrusion mm	Change in Penetration n to 4n mm
1	117.9	33.3
2	103.7	39.6
3	92.8	37.9
4	84.6	32.4
6	71.2	19.4
8	64.1	12.3
12	54.9	3.1
16	52.2	
24	51.8	
32	51.8	
48	51.8	
64		
96		
128		
192		
256		

Equipment

Mould diameter	100	mm
Height of drop	250	mm
Mass of rammer	7	kg

Sample data

Retained on 20mm sieve, removed	0	%
Mass of specimen used in test	1500	g

Specimen after test

Vane shear strength, if measured	32	kPa
Bulk density	1.85	Mg/m ³
Dry density	1.39	Mg/m ³

Moisture Content

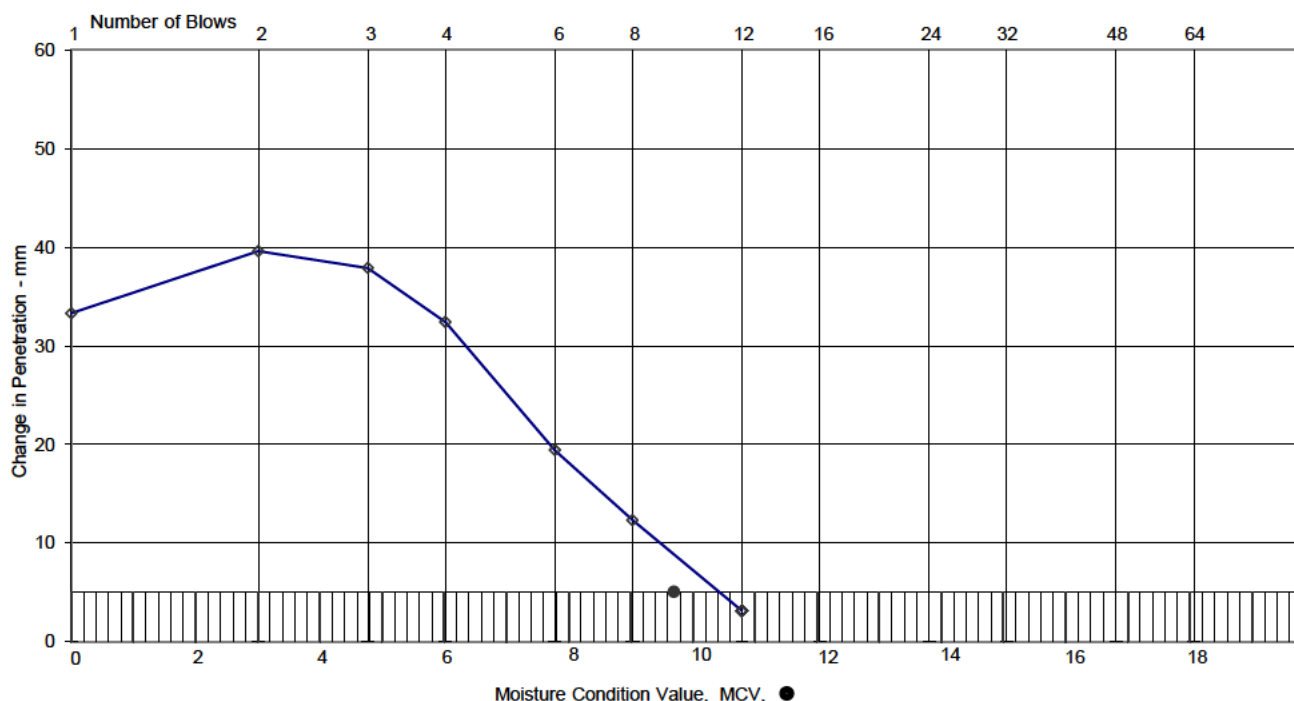
33.0 %

Moisture Condition Value, MCV

10.0

Method of interpretation

Steepest straight line



QA Ref
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MOISTURE CONDITION VALUE (MCV) TEST

Sample Details:	SAMPLE ID:	Hole No	ATK-TPM-03
	A9031-1920191204110904	Sample Depth (m BGL)	1.60 - 1.70
		Sample Type and No	B6
		Specimen Ref	

Soil Description	Brown slightly sandy slightly gravelly CLAY.
Preparation procedure and Remarks	BS1377:Part 1 and Part 4, clause 5.4 at natural moisture content

Test Data

Blows n	Penetration/ protrusion mm	Change in Penetration n to 4n mm
1	114.3	24.5
2	96.2	15.5
3	92.4	18.3
4	89.8	19.4
6	84.2	15.8
8	80.7	14.3
12	74.2	9.9
16	70.3	6.2
24	68.4	4.4
32	66.4	
48	64.3	
64	64.1	
96	64.0	
128		
192		
256		

Equipment

Mould diameter	100	mm
Height of drop	250	mm
Mass of rammer	7	kg

Sample data

Retained on 20mm sieve, removed	0	%
Mass of specimen used in test	1500	g

Specimen after test

Vane shear strength, if measured	72	kPa
Bulk density	1.72	Mg/m ³
Dry density	1.37	Mg/m ³

Moisture Content

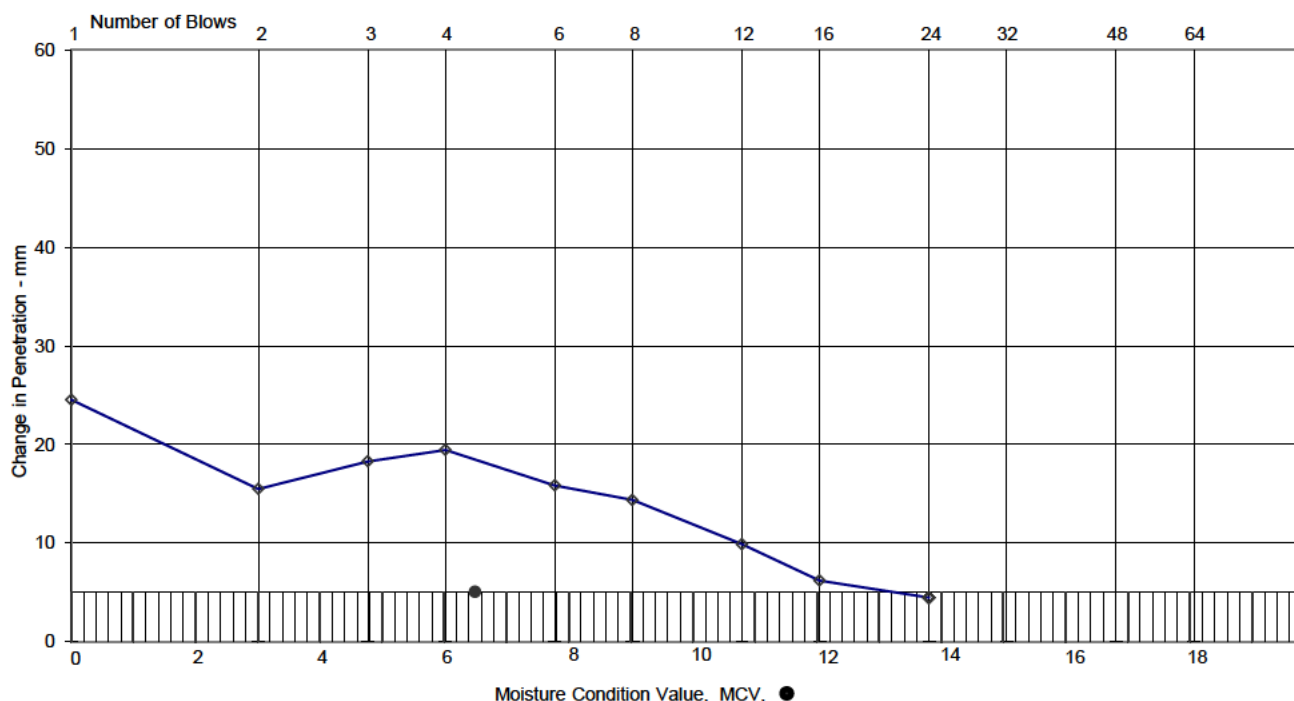
25.0 %

Moisture Condition Value, MCV

7.0

Method of interpretation

Steepest straight line



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MOISTURE CONDITION VALUE (MCV) TEST

Sample Details:	SAMPLE ID:	Hole No	ATK-TPM-03
	A9031-1920191204111005	Sample Depth (m BGL)	3.60 - 3.70
		Sample Type and No	B12
		Specimen Ref	

Soil Description	Brown slightly sandy CLAY.
Preparation procedure and Remarks	BS1377:Part 1 and Part 4, clause 5.4 at natural moisture content

Test Data

Blows n	Penetration/ protrusion mm	Change in Penetration n to 4n mm
1	141.0	28.0
2	129.3	31.5
3	120.2	36.8
4	113.0	37.2
6	103.9	32.3
8	97.8	26.9
12	83.4	13.9
16	75.8	7.2
24	71.6	4.6
32	70.9	
48	69.5	
64	68.6	
96	67.0	
128		
192		
256		

Equipment

Mould diameter	100	mm
Height of drop	250	mm
Mass of rammer	7	kg

Sample data

Retained on 20mm sieve, removed	0	%
Mass of specimen used in test	1500	g

Specimen after test

Vane shear strength, if measured	100	kPa
Bulk density	1.65	Mg/m ³
Dry density	1.23	Mg/m ³

Moisture Content

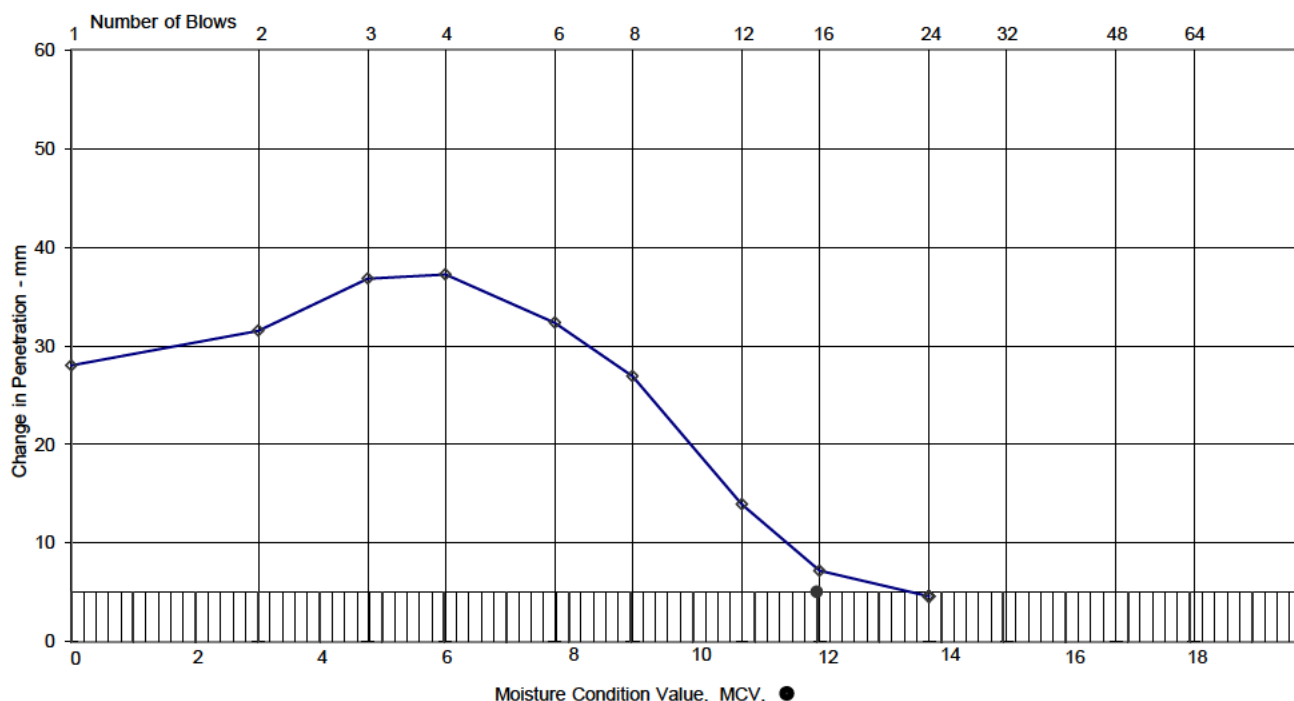
34.0 %

Moisture Condition Value, MCV

12.0

Method of interpretation

Steepest straight line



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MOISTURE CONDITION VALUE (MCV) TEST

Sample Details:	SAMPLE ID:	Hole No	ATK-TPM-05
	A9031-19-20191120031821	Sample Depth (m BGL)	0.70 - 1.00
		Sample Type and No	B4
		Specimen Ref	

Soil Description	Brown slightly sandy CLAY.
Preparation procedure and Remarks	BS1377:Part 1 and Part 4, clause 5.4 at natural moisture content

Test Data

Blows n	Penetration/ protrusion mm	Change in Penetration n to 4n mm
1	116.0	28.6
2	109.0	43.6
3	94.5	36.6
4	87.4	30.0
6	76.7	20.0
8	65.4	8.8
12	57.9	2.3
16	57.4	
24	56.7	
32	56.6	
48	55.6	
64		
96		
128		
192		
256		

Equipment

Mould diameter	100	mm
Height of drop	250	mm
Mass of rammer	7	kg

Sample data

Retained on 20mm sieve, removed	0	%
Mass of specimen used in test	1500	g

Specimen after test

Vane shear strength, if measured		kPa
Bulk density	1.80	Mg/m ³
Dry density	1.26	Mg/m ³

Moisture Content

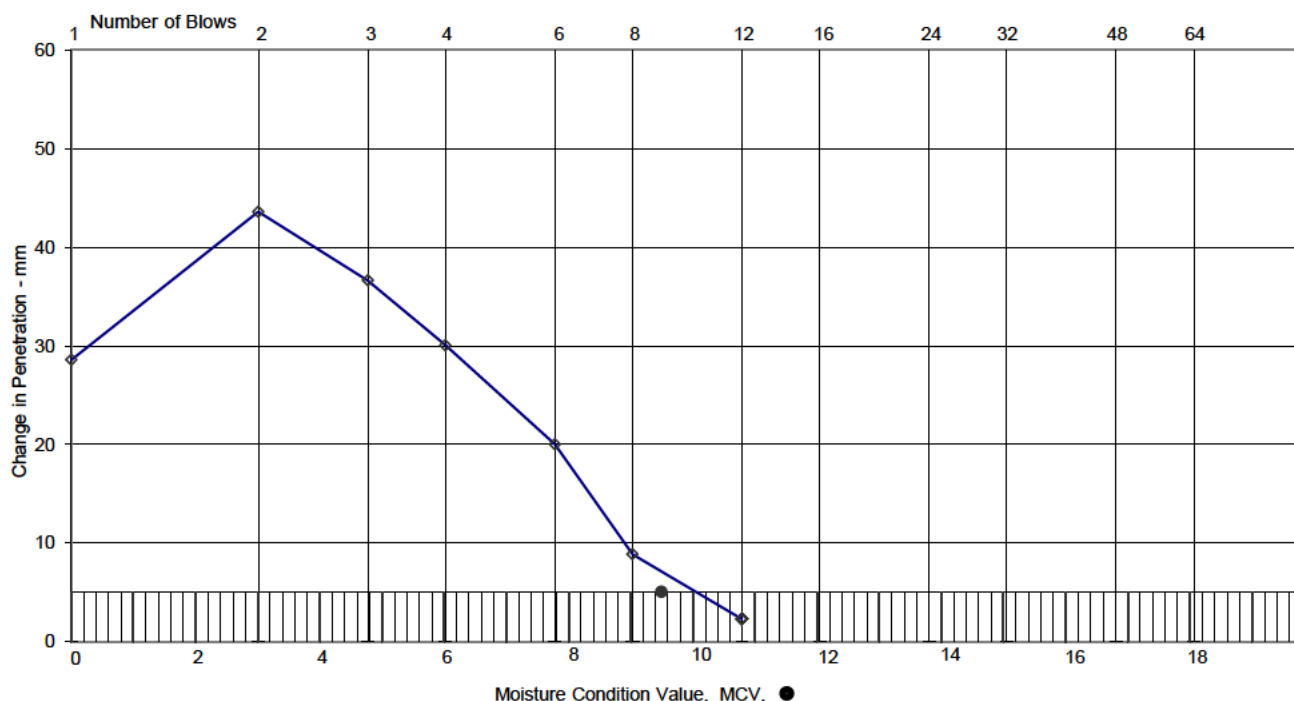
43.0 %

Moisture Condition Value, MCV

10.0

Method of interpretation

Steepest straight line



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MOISTURE CONDITION VALUE (MCV) TEST

Sample Details:	SAMPLE ID:	Hole No	ATK-TPM-05
	A9031-19-20191120032002	Sample Depth (m BGL)	1.60 - 1.70
		Sample Type and No	B8
		Specimen Ref	

Soil Description	Brown slightly sandy slightly gravelly CLAY.
Preparation procedure and Remarks	BS1377:Part 1 and Part 4, clause 5.4 at natural moisture content

Test Data

Blows n	Penetration/ protrusion mm	Change in Penetration n to 4n mm
1	128.8	30.4
2	113.7	32.8
3	104.5	30.9
4	98.4	27.9
6	88.6	18.3
8	80.9	10.6
12	73.6	3.8
16	70.5	
24	70.3	
32	70.3	
48	69.8	
64		
96		
128		
192		
256		

Equipment

Mould diameter	100	mm
Height of drop	250	mm
Mass of rammer	7	kg

Sample data

Retained on 20mm sieve, removed	0	%
Mass of specimen used in test	1500	g

Specimen after test

Vane shear strength, if measured	58	kPa
Bulk density	1.57	Mg/m ³
Dry density	1.20	Mg/m ³

Moisture Content

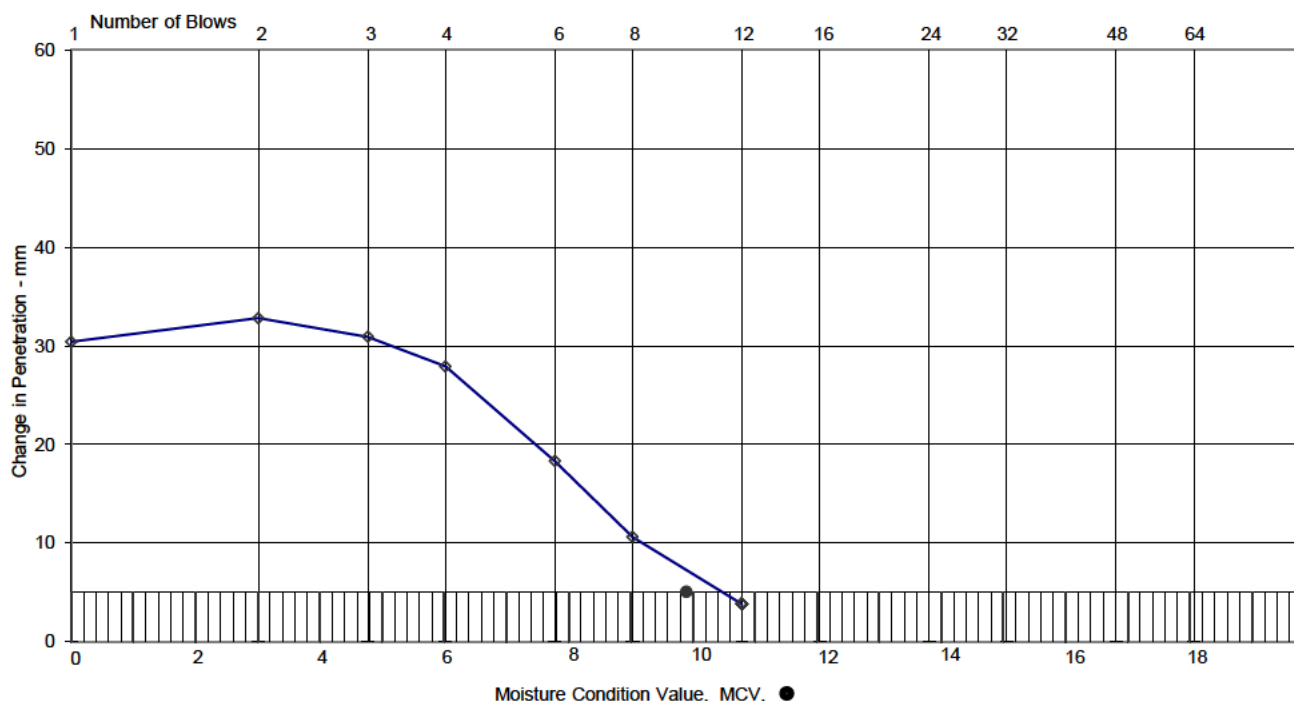
31.0 %

Moisture Condition Value, MCV

10.0

Method of interpretation

Steepest straight line



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MOISTURE CONDITION VALUE (MCV) TEST

Sample Details:	SAMPLE ID:	Hole No	ATK-TPM-05
	A9031-19-20191120032311	Sample Depth (m BGL)	2.90 - 3.00
		Sample Type and No	B12
		Specimen Ref	

Soil Description	Brown slightly sandy slightly gravelly CLAY.
Preparation procedure and Remarks	BS1377:Part 1 and Part 4, clause 5.4 at natural moisture content

Test Data

Blows n	Penetration/ protrusion mm	Change in Penetration n to 4n mm
1	118.8	27.8
2	112.8	38.2
3	100.5	36.6
4	91.0	33.0
6	79.2	27.1
8	74.6	23.7
12	63.8	13.6
16	58.0	8.2
24	52.1	3.2
32	50.8	
48	50.3	
64	49.8	
96	48.9	
128		
192		
256		

Equipment

Mould diameter	100	mm
Height of drop	250	mm
Mass of rammer	7	kg

Sample data

Retained on 20mm sieve, removed	0	%
Mass of specimen used in test	1500	g

Specimen after test

Vane shear strength, if measured	56	kPa
Bulk density	1.92	Mg/m3
Dry density	1.44	Mg/m3

Moisture Content

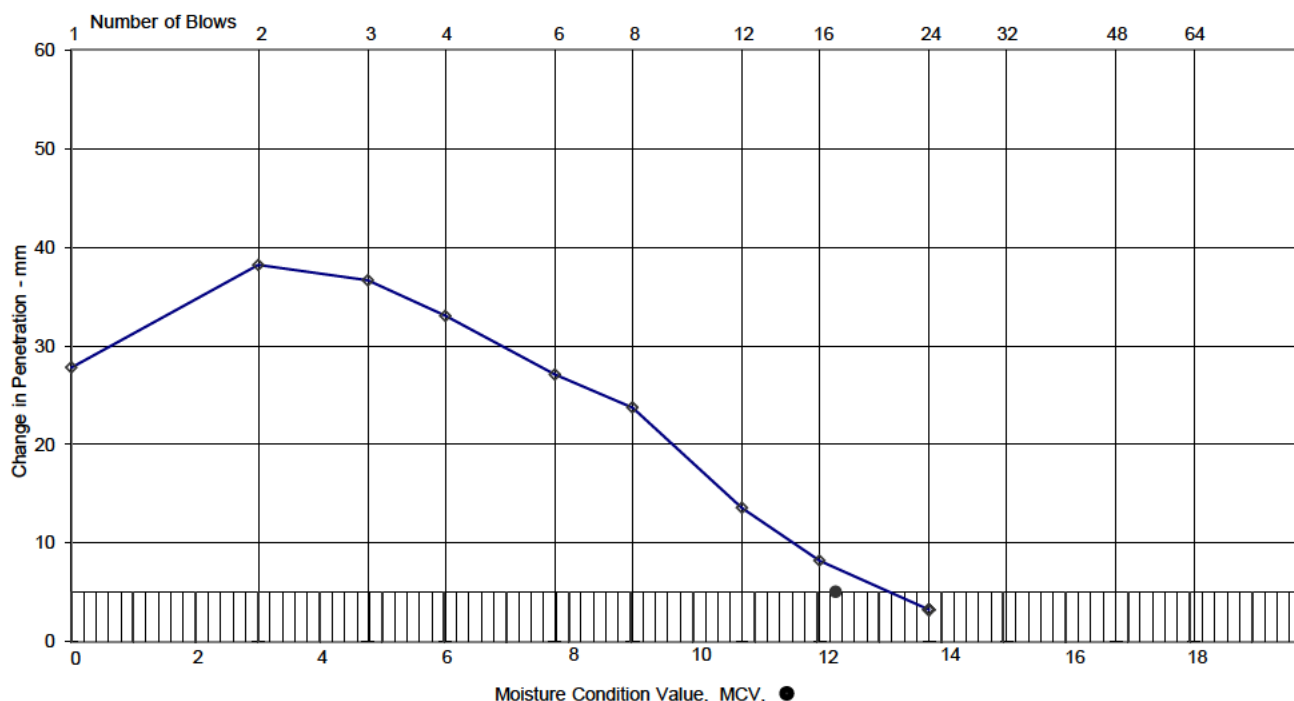
33.0 %

Moisture Condition Value, MCV

12.0

Method of interpretation

Steepest straight line



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SLR 4, 5.4
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MOISTURE CONDITION VALUE (MCV) TEST

Sample Details:	SAMPLE ID:	Hole No	ATK-TPM-05
	A9031-19-20191120032444	Sample Depth (m BGL)	4.40 - 4.50
		Sample Type and No	B17
		Specimen Ref	

Soil Description	Brown slightly sandy CLAY.
Preparation procedure and Remarks	BS1377:Part 1 and Part 4, clause 5.4 at natural moisture content

Test Data

Blows n	Penetration/ protrusion mm	Change in Penetration n to 4n mm
1	100.5	28.1
2	86.7	27.0
3	77.9	24.6
4	72.4	23.2
6	65.6	20.0
8	59.7	14.7
12	53.3	8.8
16	49.3	5.0
24	45.7	
32	45.0	
48	44.5	
64	44.3	
96		
128		
192		
256		

Equipment

Mould diameter	100	mm
Height of drop	250	mm
Mass of rammer	7	kg

Sample data

Retained on 20mm sieve, removed	0	%
Mass of specimen used in test	1500	g

Specimen after test

Vane shear strength, if measured	85	kPa
Bulk density	2.06	Mg/m ³
Dry density	1.66	Mg/m ³

Moisture Content

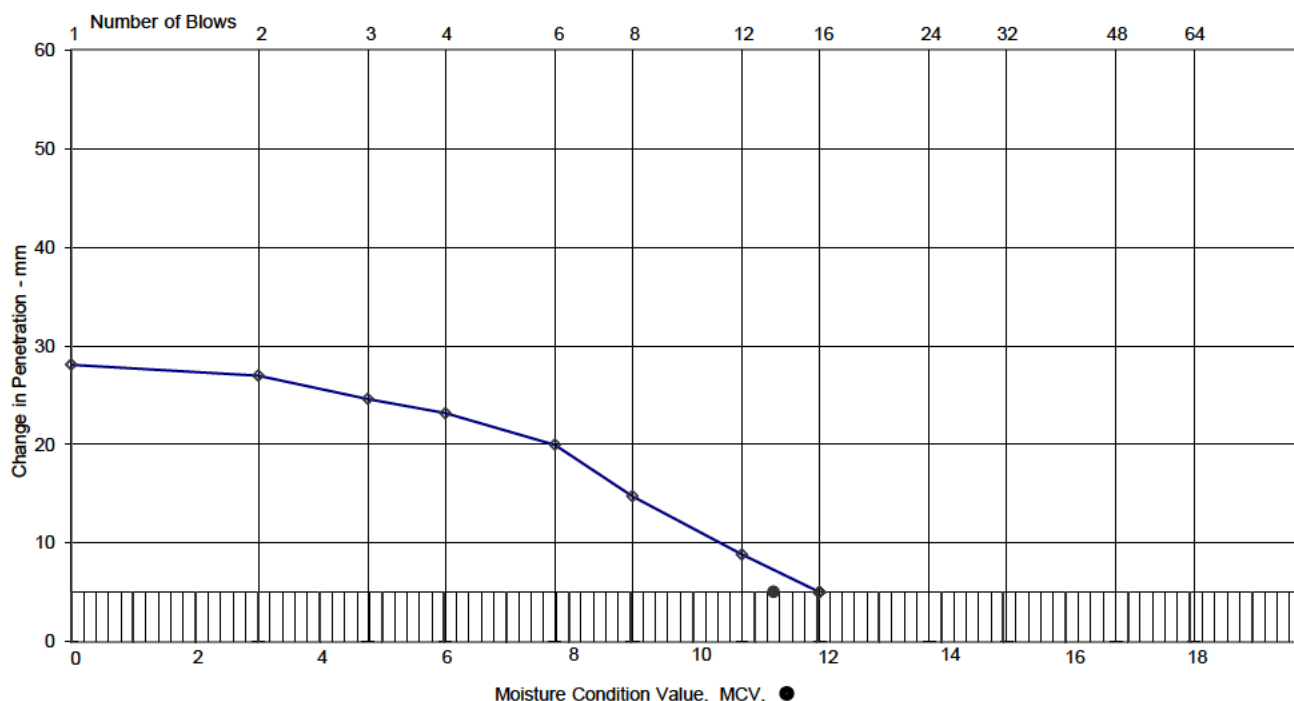
24.0 %

Moisture Condition Value, MCV

11.0

Method of interpretation

Steepest straight line



QA Ref
SLR 4, 5.4
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Figure
MCV

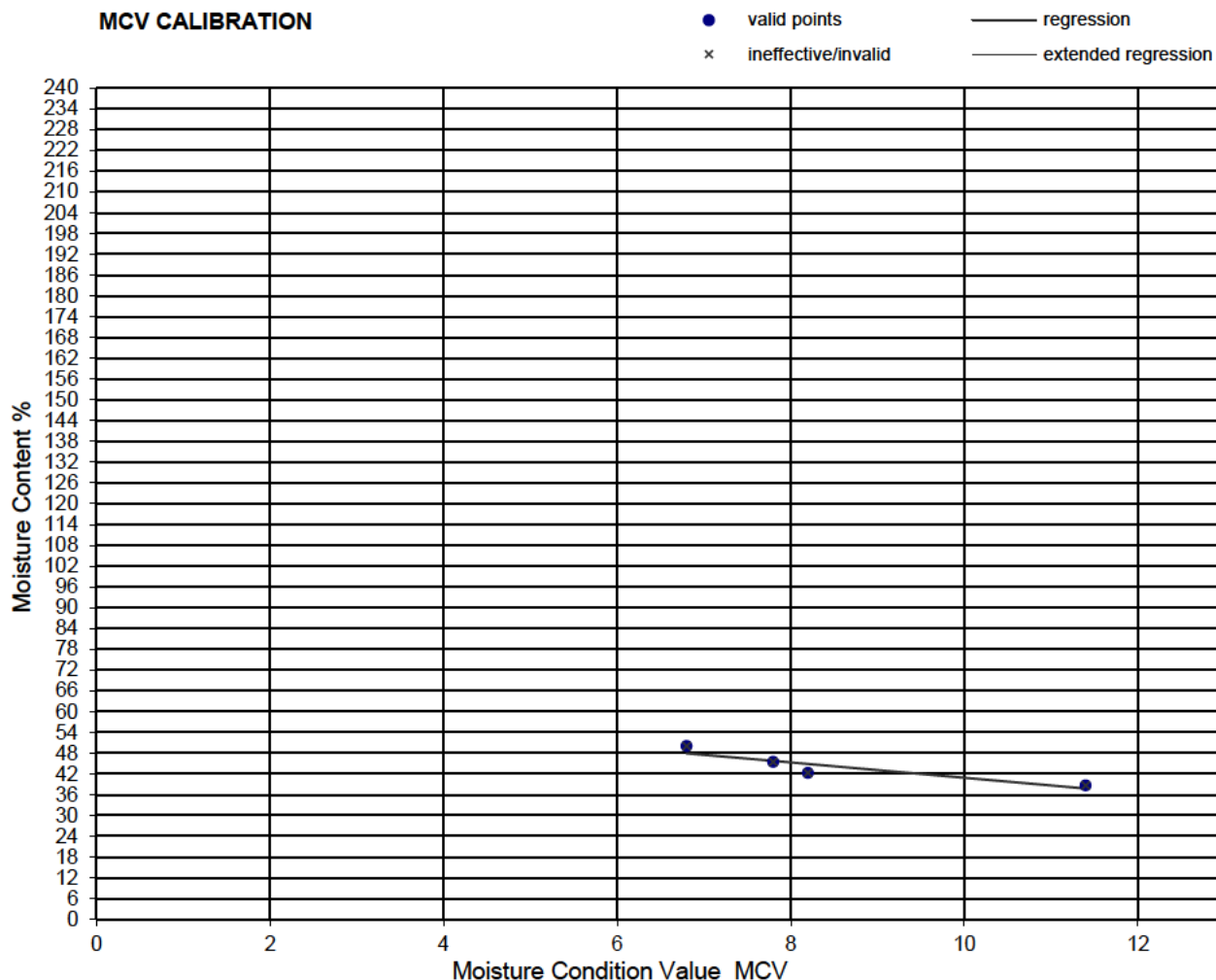
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MOISTURE CONDITION VALUE (MCV) / MOISTURE CONTENT

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-05
	A9031-1920191121112036	Sample Depth (m BGL)	0.80 - 1.20
		Sample Type and No	B6
		Specimen Ref	

MCV CALIBRATION



Characteristics of calibration line (determined using linear regression)

Intercept	63.0
Slope	-2.22
Sensitivity (Change in MCV per 1% moisture content)	0.45
Correlation (proximity of test points to regression line)	-0.91
Method of interpretation of MCV	Steepest straight line

The above characteristics are NOT covered by UKAS accreditation to BS1377

QA Ref
SLR 4,5,5
Rev 2.8
Jun 19



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Figure
MCVREL

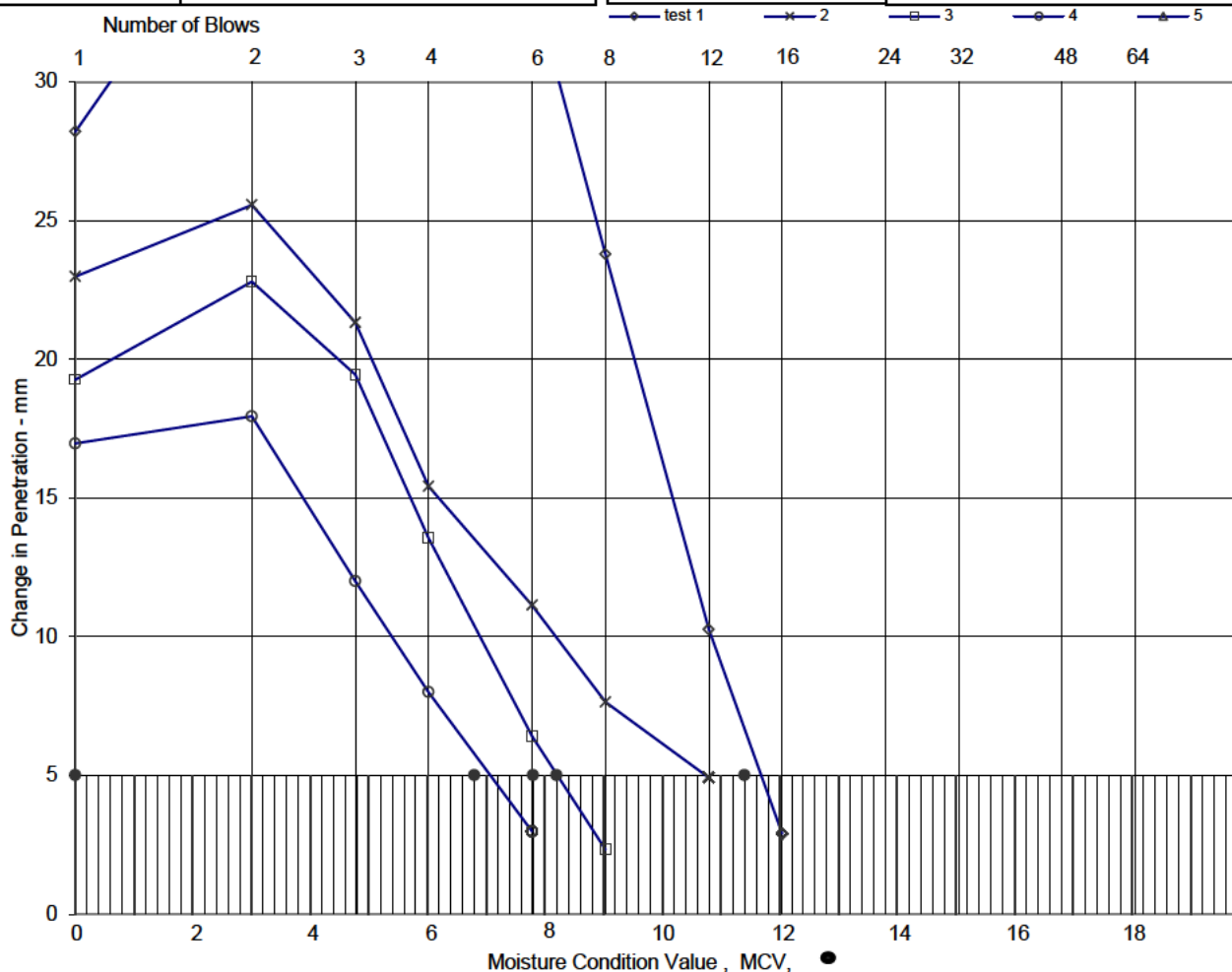
sheet 1 of 2

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MOISTURE CONDITION VALUE (MCV) / MOISTURE CONTENT

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-05
	A9031-1920191121112036	Sample Depth (m BGL)	0.80 - 1.20
		Sample Type and No	B6
		Specimen Ref	



Test No	* ineffective / invalid point	1	2	3	4	*
Moisture Condition Value		11.4	8.2	7.8	6.8	
Moisture Content	%	39.0	42.0	45.0	50.0	
Bulk density after test	Mg/m³	1.56	1.25	1.24	1.28	
Dry density after test	Mg/m³	1.13	0.88	0.85	0.85	
Vane shear strength	kPa	80	72	60	44	

Soil description	Brown slightly sandy slightly gravelly CLAY.
Procedure / Preparation	using single sample
Remarks	

Initial moisture content <20mm	%	38.6
Material retained on 20mm sieve	%	0

Method of determining MCV
Steepest straight line

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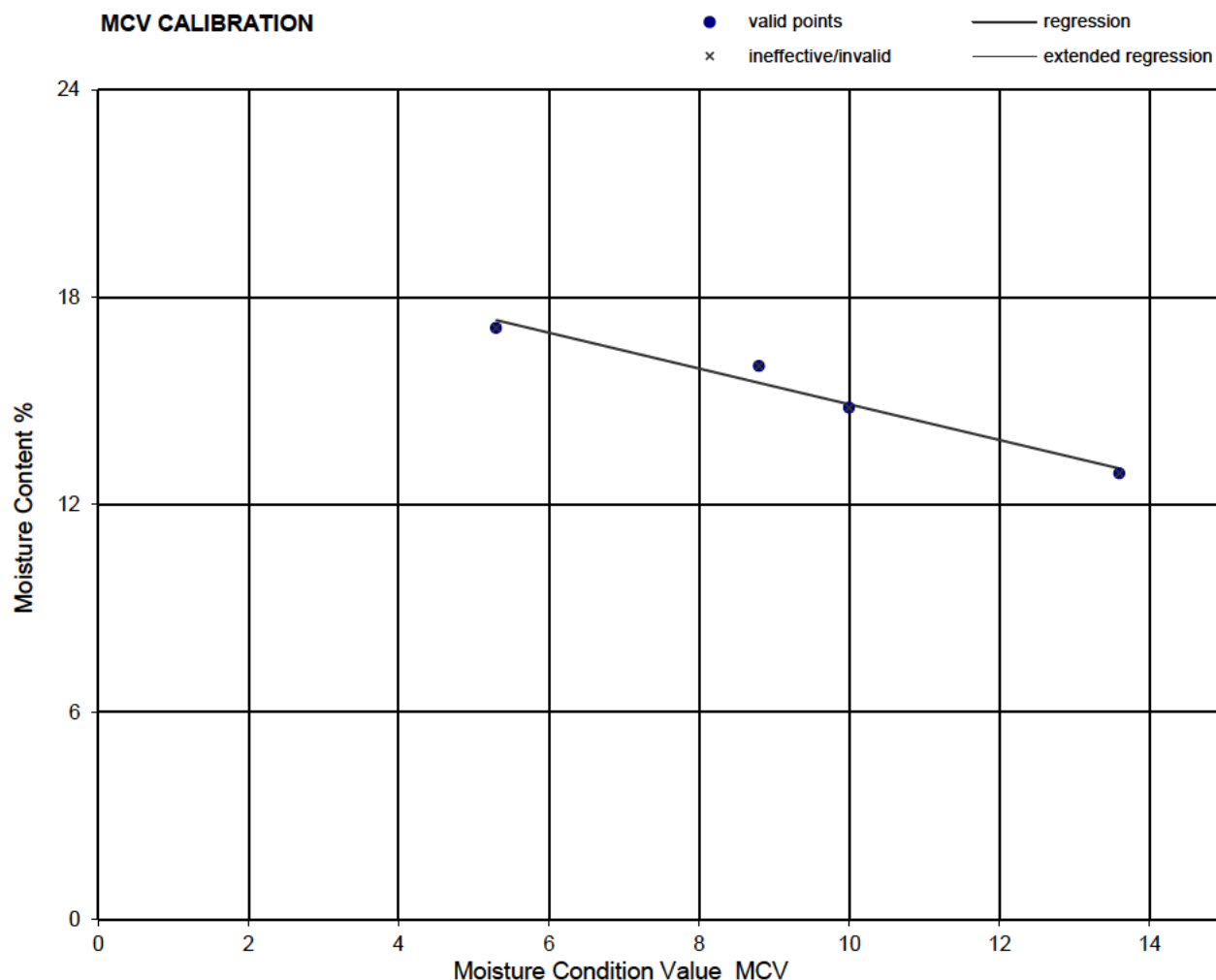
Figure
MCVREL

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MOISTURE CONDITION VALUE (MCV) / MOISTURE CONTENT

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-06
	A9031-1920191205122237	Sample Depth (m BGL)	1
		Sample Type and No	B7
		Specimen Ref	



Characteristics of calibration line (determined using linear regression)	
Intercept	20.1
Slope	-0.52
Sensitivity (Change in MCV per 1% moisture content)	1.94
Correlation (proximity of test points to regression line)	-0.98
Method of interpretation of MCV	Steepest straight line

The above characteristics are NOT covered by UKAS accreditation to BS1377

QA Ref
SLR 4,5.5
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Project Name HAVANT THICKET WATER STORAGE

Figure
MCVREL

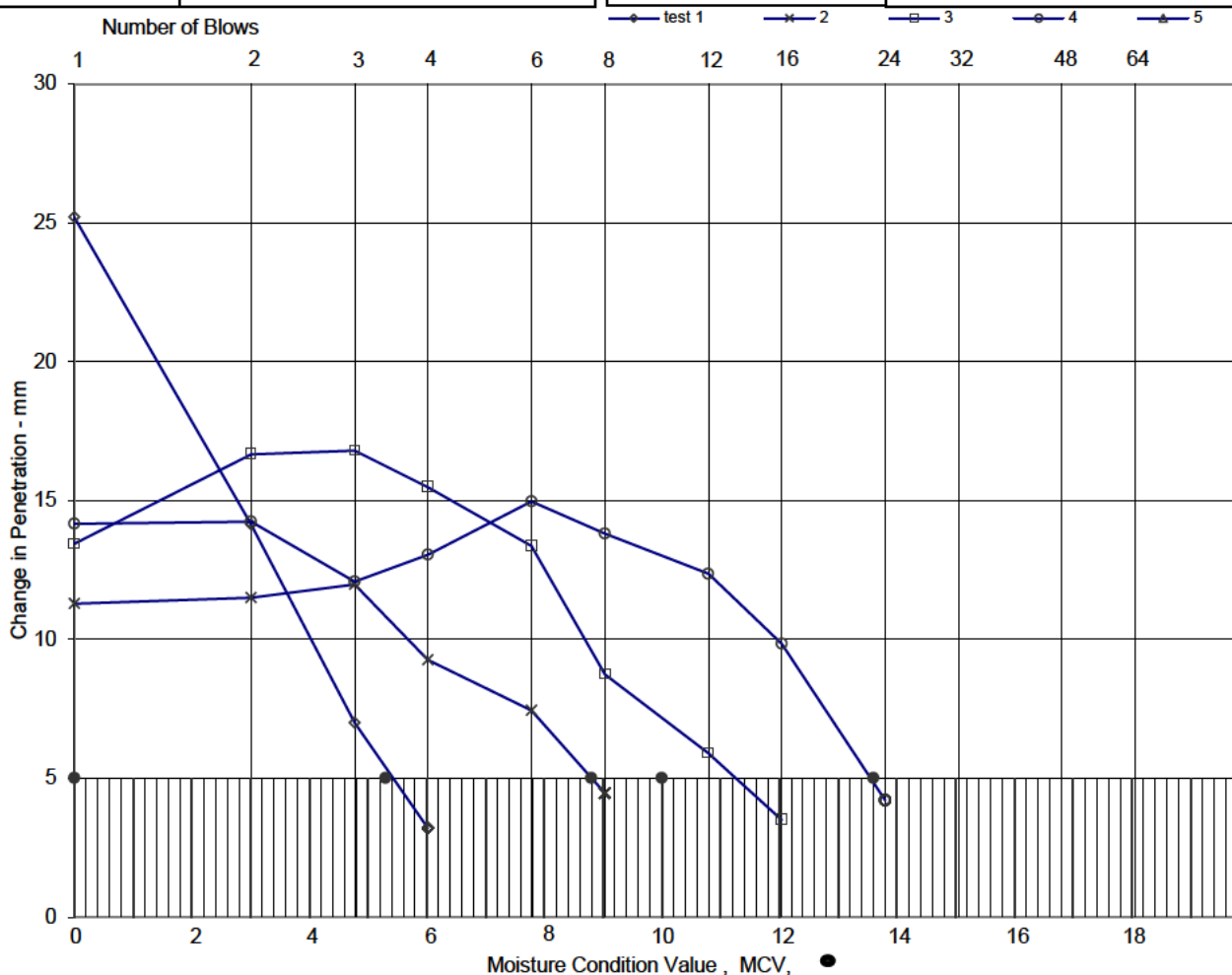
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MOISTURE CONDITION VALUE (MCV) / MOISTURE CONTENT

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-06
	A9031-1920191205122237	Sample Depth (m BGL)	1
		Sample Type and No	B7
		Specimen Ref	



Test No	* ineffective / invalid point	1	2	3	4	*
Moisture Condition Value		5.3	8.8	10.0	13.6	
Moisture Content	%	17.0	16.0	15.0	13.0	
Bulk density after test	Mg/m ³	1.71	1.65	1.72	1.78	
Dry density after test	Mg/m ³	1.46	1.42	1.50	1.58	
Vane shear strength	kPa	60	72	80	94	

Soil description	Light brown slightly sandy gravelly CLAY with two cobbles.
Procedure / Preparation	using single sample
Remarks	

Initial moisture content <20mm	%	17
Material retained on 20mm sieve	%	33

Method of determining MCV
Steepest straight line

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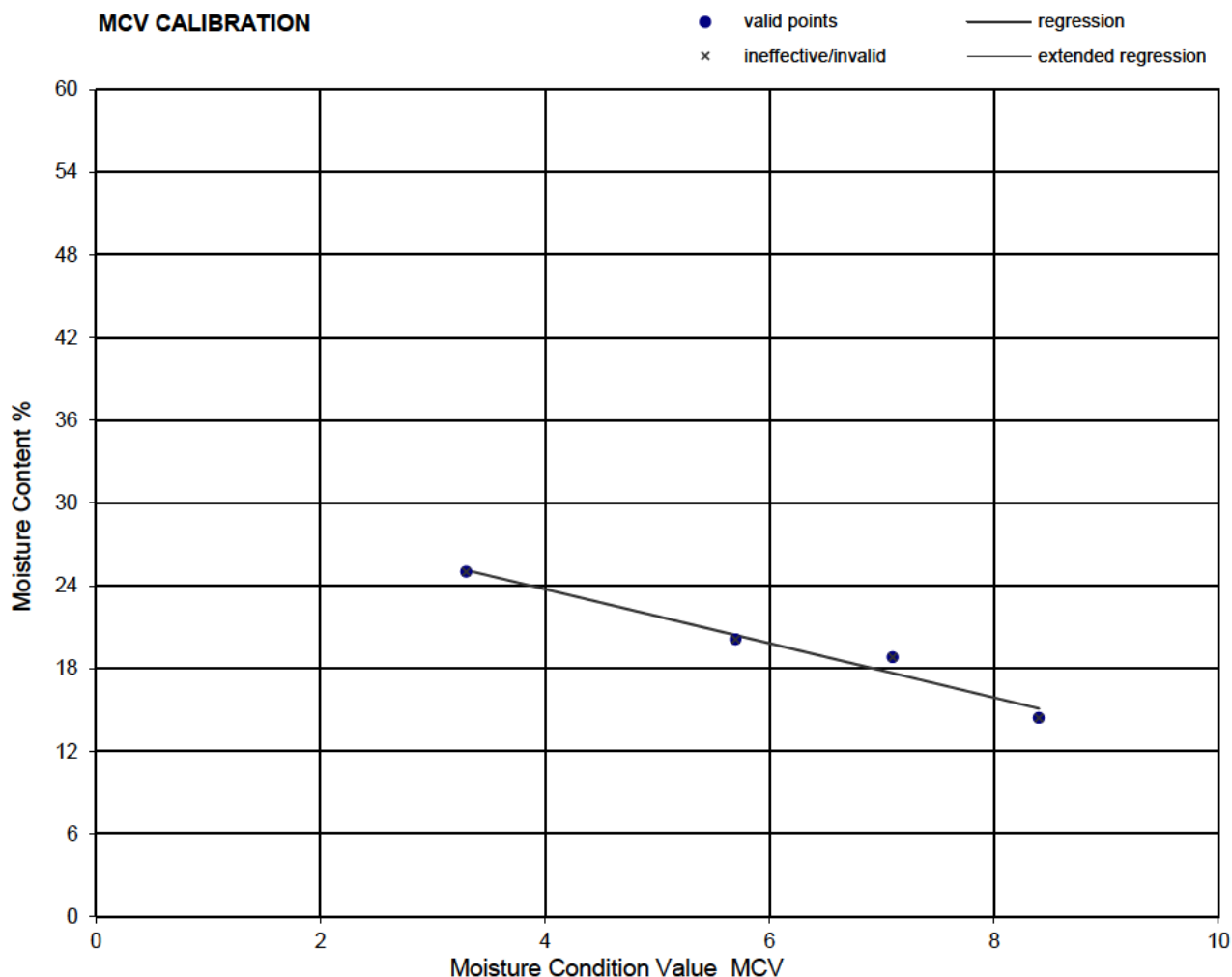
Figure
MCVREL

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MOISTURE CONDITION VALUE (MCV) / MOISTURE CONTENT

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-07A
	A9031-1920191209025616	Sample Depth (m BGL)	3.50 - 4.00
		Sample Type and No	B11
		Specimen Ref	



Characteristics of calibration line (determined using linear regression)	
Intercept	31.6
Slope	-1.97
Sensitivity (Change in MCV per 1% moisture content)	0.51
Correlation (proximity of test points to regression line)	-0.98
Method of interpretation of MCV	Steepest straight line

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QA Ref
SLR 4,5,5
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Jun 19



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Figure
MCVREL

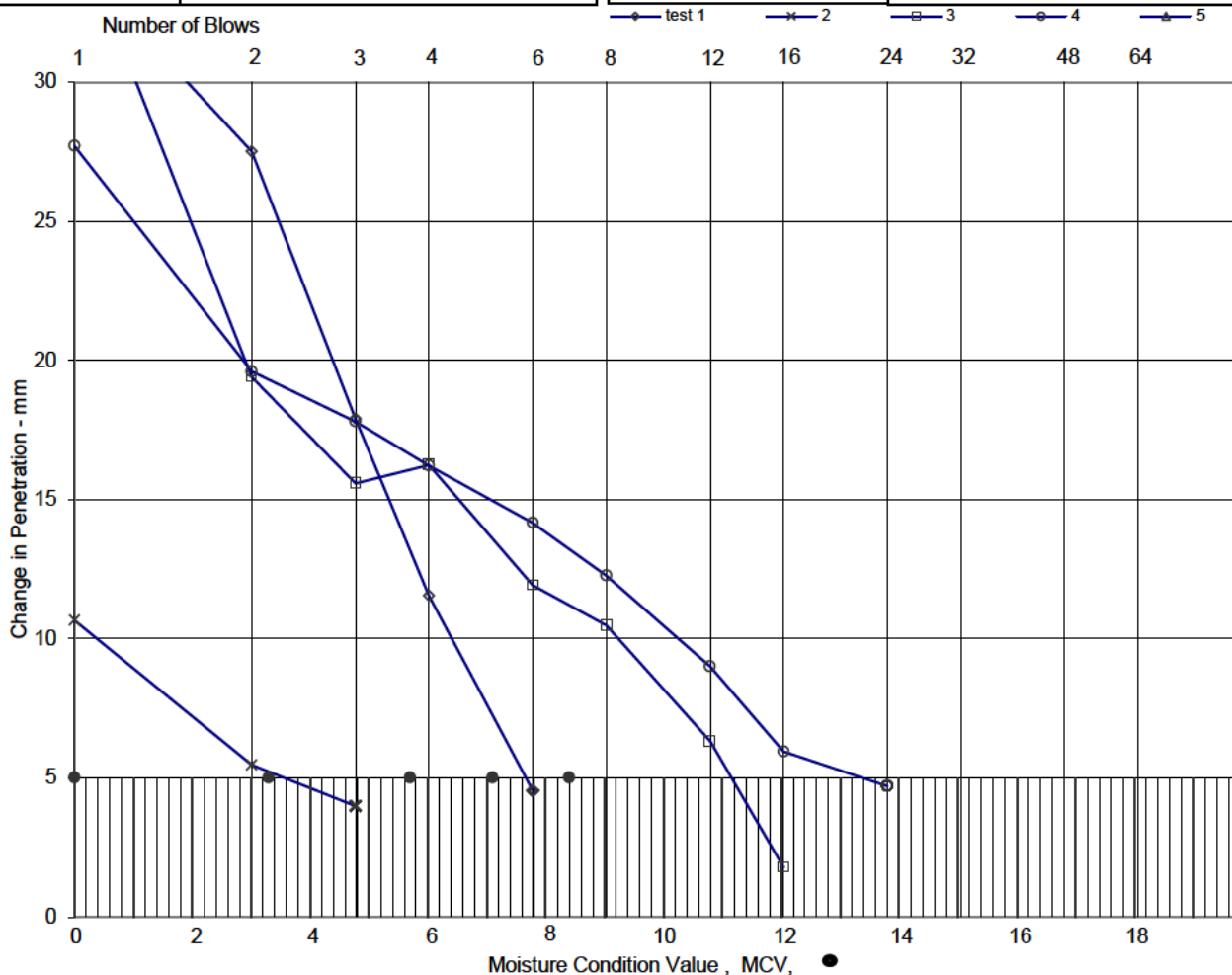
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MOISTURE CONDITION VALUE (MCV) / MOISTURE CONTENT

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-07A
	A9031-1920191209025616	Sample Depth (m BGL)	3.50 - 4.00
		Sample Type and No	B11
		Specimen Ref	



Test No	* ineffective / invalid point	1	2	3	4	*
Moisture Condition Value		7.1	3.3	5.7	8.4	
Moisture Content	%	19.0	25.0	20.0	14.0	
Bulk density after test	Mg/m ³	2.20	1.66	2.15	1.89	
Dry density after test	Mg/m ³	1.85	1.33	1.79	1.65	
Vane shear strength	kPa	18	24	32	46	

Soil description	Brown slightly sandy CLAY.
Procedure / Preparation	using single sample
Remarks	

Initial moisture content <20mm	%	21.4
Material retained on 20mm sieve	%	0

Method of determining MCV
Steepest straight line

QA Ref
SLR 4,5,5
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Jun 19



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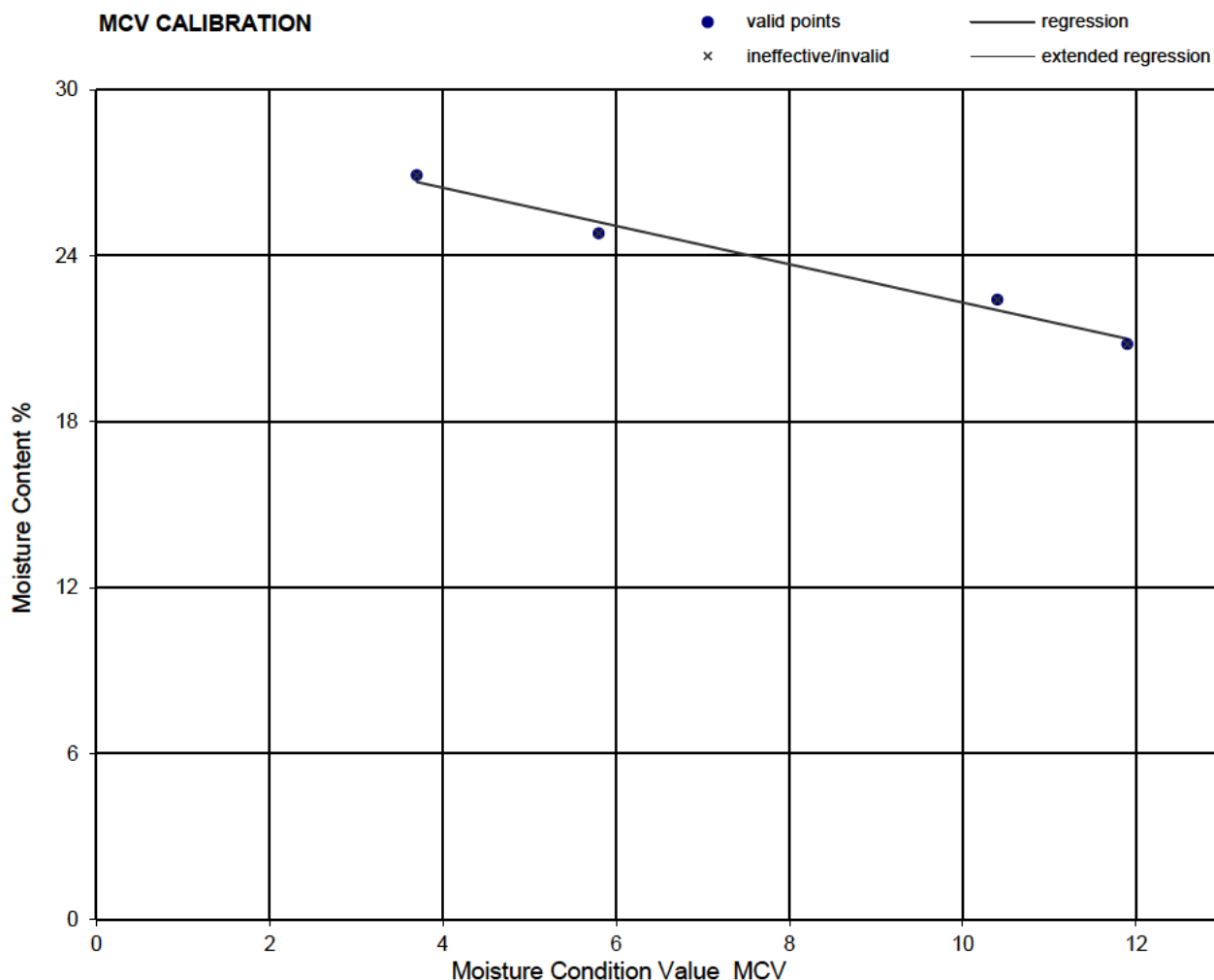
Figure
MCVREL

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MOISTURE CONDITION VALUE (MCV) / MOISTURE CONTENT

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-07A
	A9031-1920191209030447	Sample Depth (m BGL)	9.50 - 10.00
		Sample Type and No	B33
		Specimen Ref	



Characteristics of calibration line (determined using linear regression)	
Intercept	29.2
Slope	-0.69
Sensitivity (Change in MCV per 1% moisture content)	1.45
Correlation (proximity of test points to regression line)	-0.99
Method of interpretation of MCV	Steepest straight line

The above characteristics are NOT covered by UKAS accreditation to BS1377

QA Ref
SLR 4,5,5
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Jun 19



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Project Name HAVANT THICKET WATER STORAGE

Figure
MCVREL

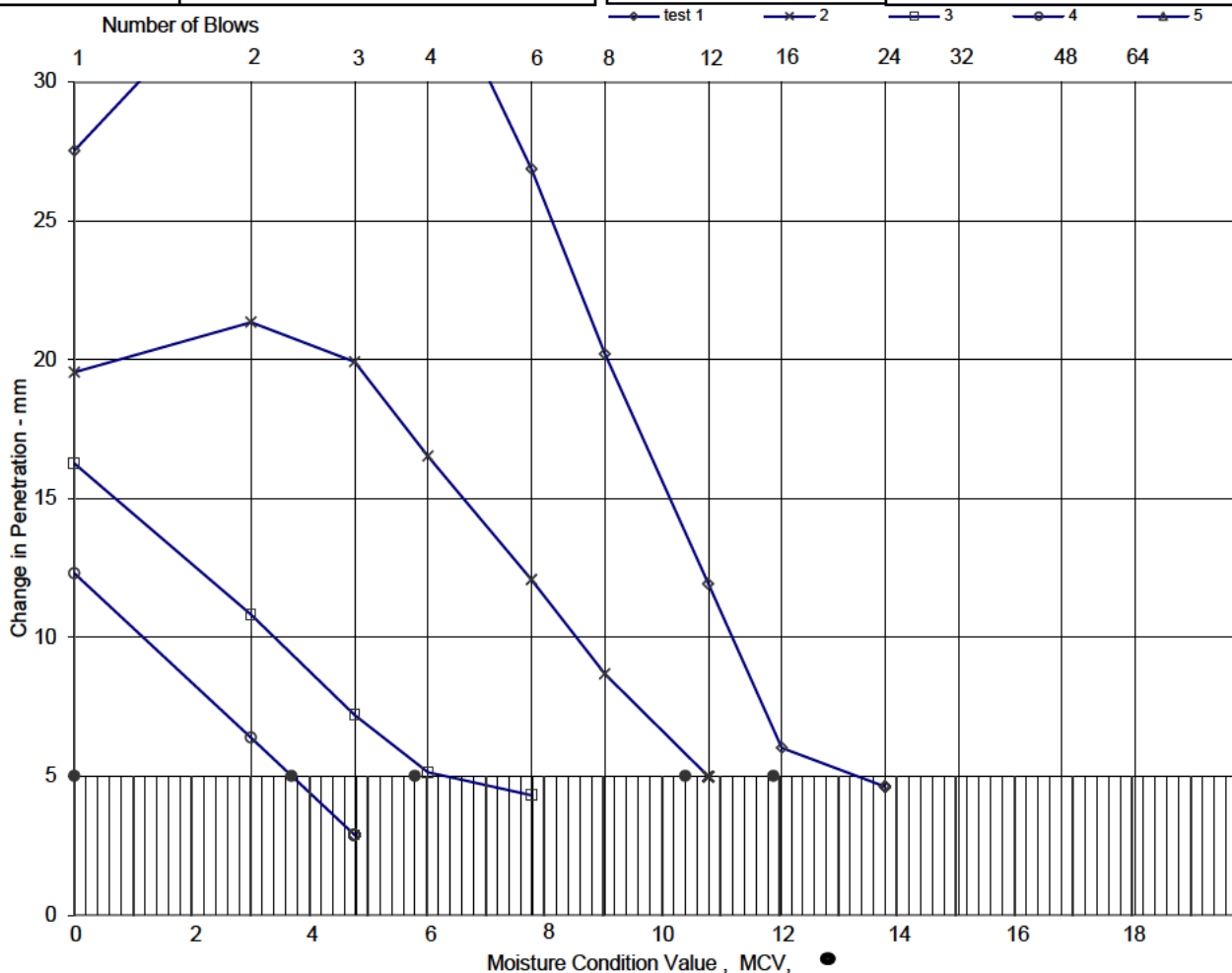
sheet 1 of 2

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MOISTURE CONDITION VALUE (MCV) / MOISTURE CONTENT

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-07A
	A9031-1920191209030447	Sample Depth (m BGL)	9.50 - 10.00
		Sample Type and No	B33
		Specimen Ref	



Test No	* ineffective / invalid point	1	2	3	4	*
Moisture Condition Value		11.9	10.4	5.8	3.7	
Moisture Content	%	21.0	22.0	25.0	27.0	
Bulk density after test	Mg/m ³	1.78	1.46	1.35	1.31	
Dry density after test	Mg/m ³	1.47	1.19	1.08	1.03	
Vane shear strength	kPa	86	80	70	62	

Soil description	Brown slightly sandy CLAY.
Procedure / Preparation	using single sample
Remarks	

Initial moisture content <20mm	%	20.8
Material retained on 20mm sieve	%	0

Method of determining MCV
Steepest straight line

QA Ref
SLR 4,5,5
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Project Name HAVANT THICKET WATER STORAGE

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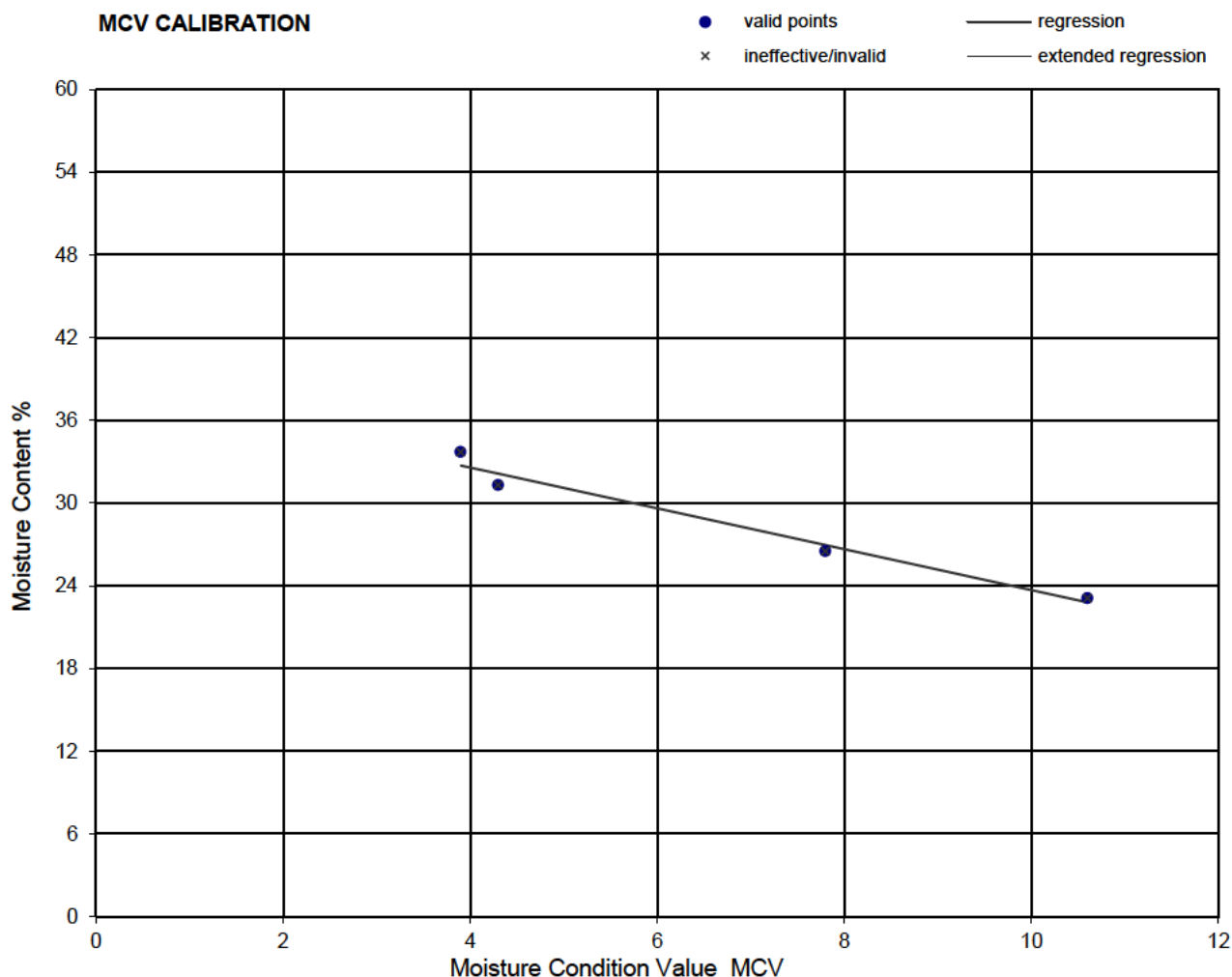
Figure
MCVREL

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MOISTURE CONDITION VALUE (MCV) / MOISTURE CONTENT

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-08
	A9031-19-20191126042202	Sample Depth (m BGL)	3.20 - 3.65
		Sample Type and No	B13
		Specimen Ref	



Characteristics of calibration line (determined using linear regression)	
Intercept	38.5
Slope	-1.48
Sensitivity (Change in MCV per 1% moisture content)	0.67
Correlation (proximity of test points to regression line)	-0.99
Method of interpretation of MCV	Steepest straight line

The above characteristics are NOT covered by UKAS accreditation to BS1377

QA Ref
SLR 4,5,5
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Figure
MCVREL

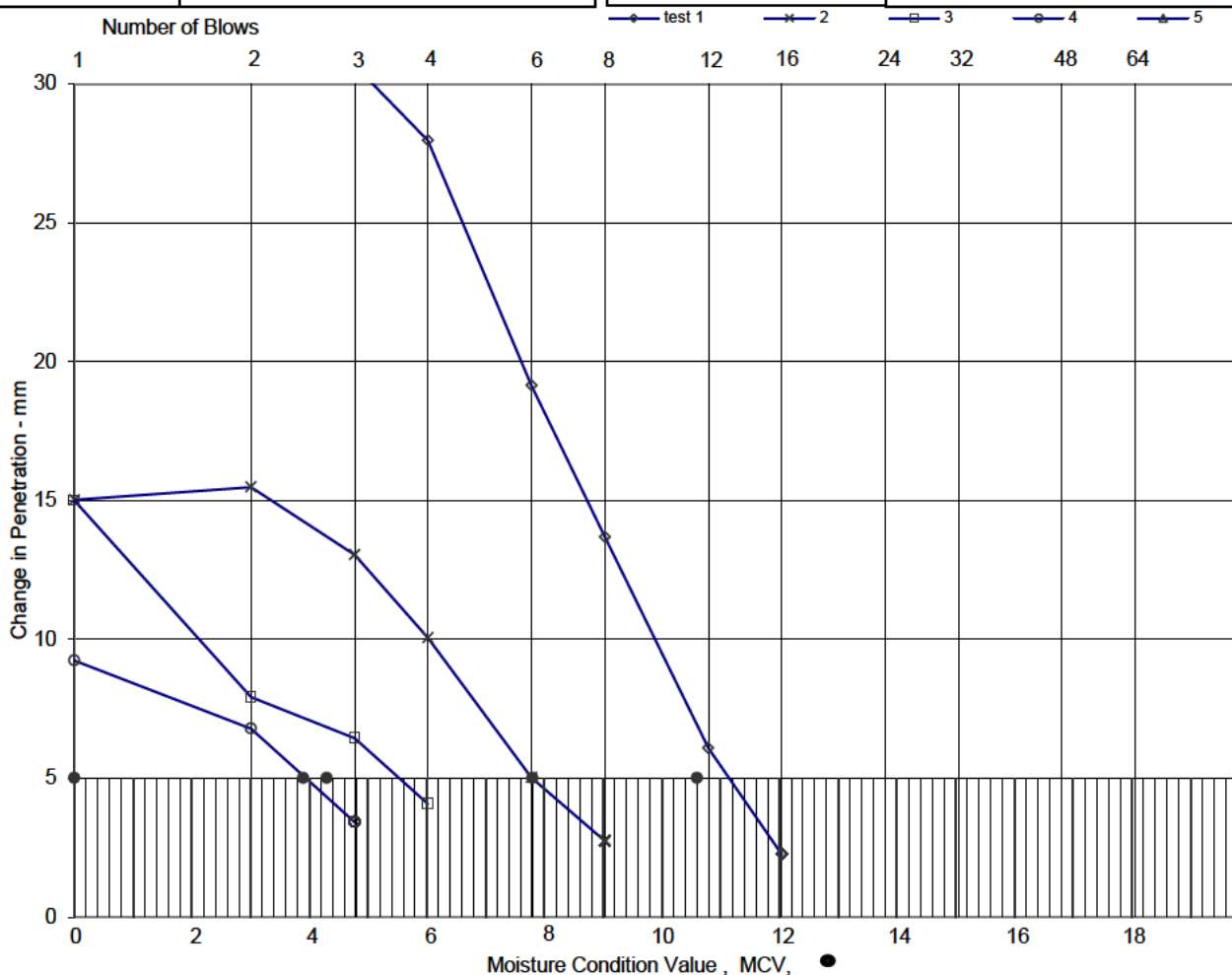
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MOISTURE CONDITION VALUE (MCV) / MOISTURE CONTENT

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-08
	A9031-19-20191126042202	Sample Depth (m BGL)	3.20 - 3.65
		Sample Type and No	B13
		Specimen Ref	



Test No	* ineffective / invalid point	1	2	3	4	*
Moisture Condition Value		10.6	7.8	4.3	3.9	
Moisture Content	%	23.0	27.0	31.0	34.0	
Bulk density after test	Mg/m ³	1.76	1.37	1.36	1.31	
Dry density after test	Mg/m ³	1.43	1.08	1.04	0.98	
Vane shear strength	kPa	82	76	72	66	

Soil description	Brown slightly sandy CLAY.
Procedure / Preparation	using single sample
Remarks	

Initial moisture content <20mm	%	23.1
Material retained on 20mm sieve	%	0

Method of determining MCV
Steepest straight line

QA Ref
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Figure
MCVREL

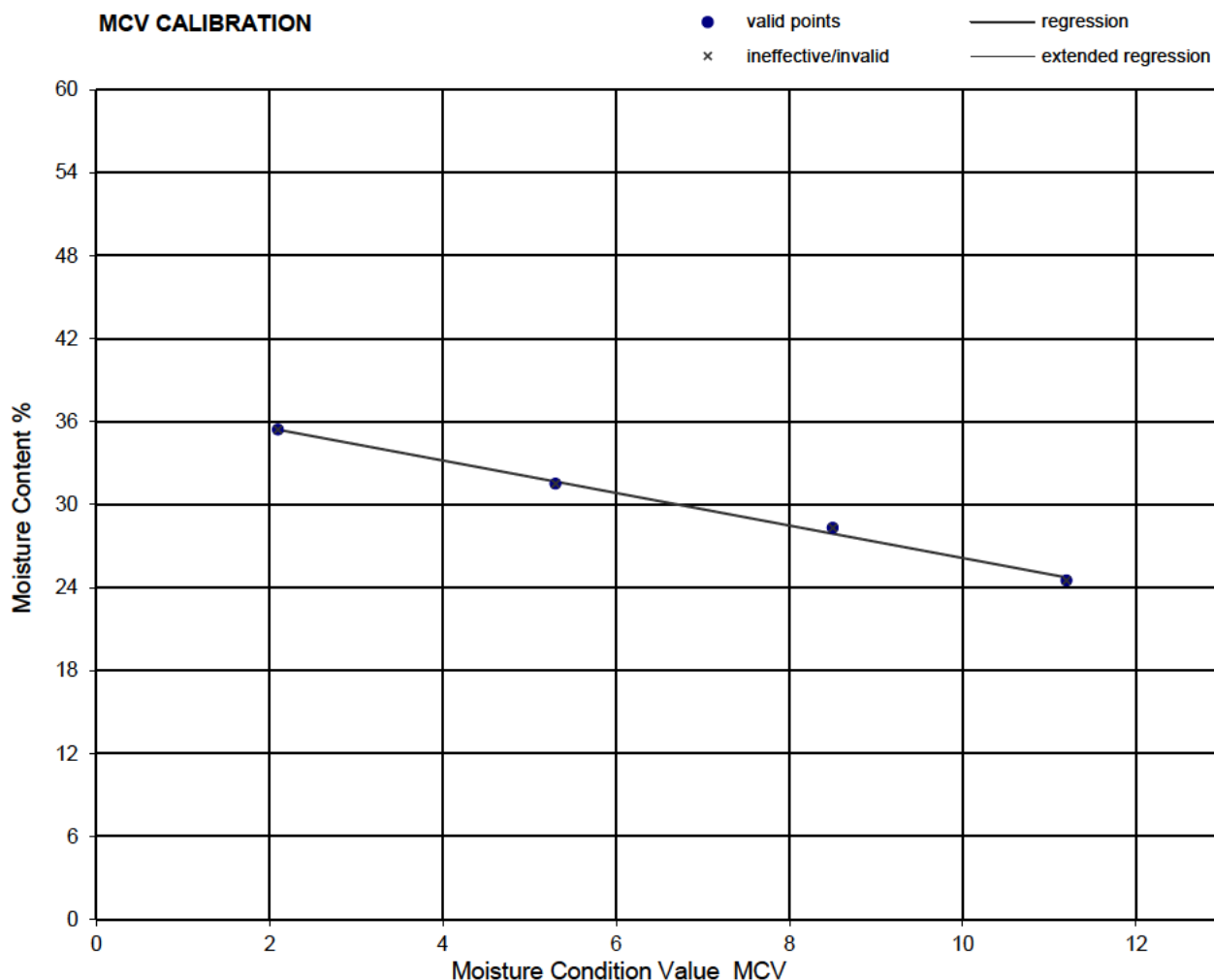
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MOISTURE CONDITION VALUE (MCV) / MOISTURE CONTENT

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-08
	A9031-19-20191126042408	Sample Depth (m BGL)	4.65 - 5.20
		Sample Type and No	B17
		Specimen Ref	



Characteristics of calibration line (determined using linear regression)	
Intercept	37.9
Slope	-1.17
Sensitivity (Change in MCV per 1% moisture content)	0.85
Correlation (proximity of test points to regression line)	-1.00
Method of interpretation of MCV	Steepest straight line

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QA Ref
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Figure
MCVREL

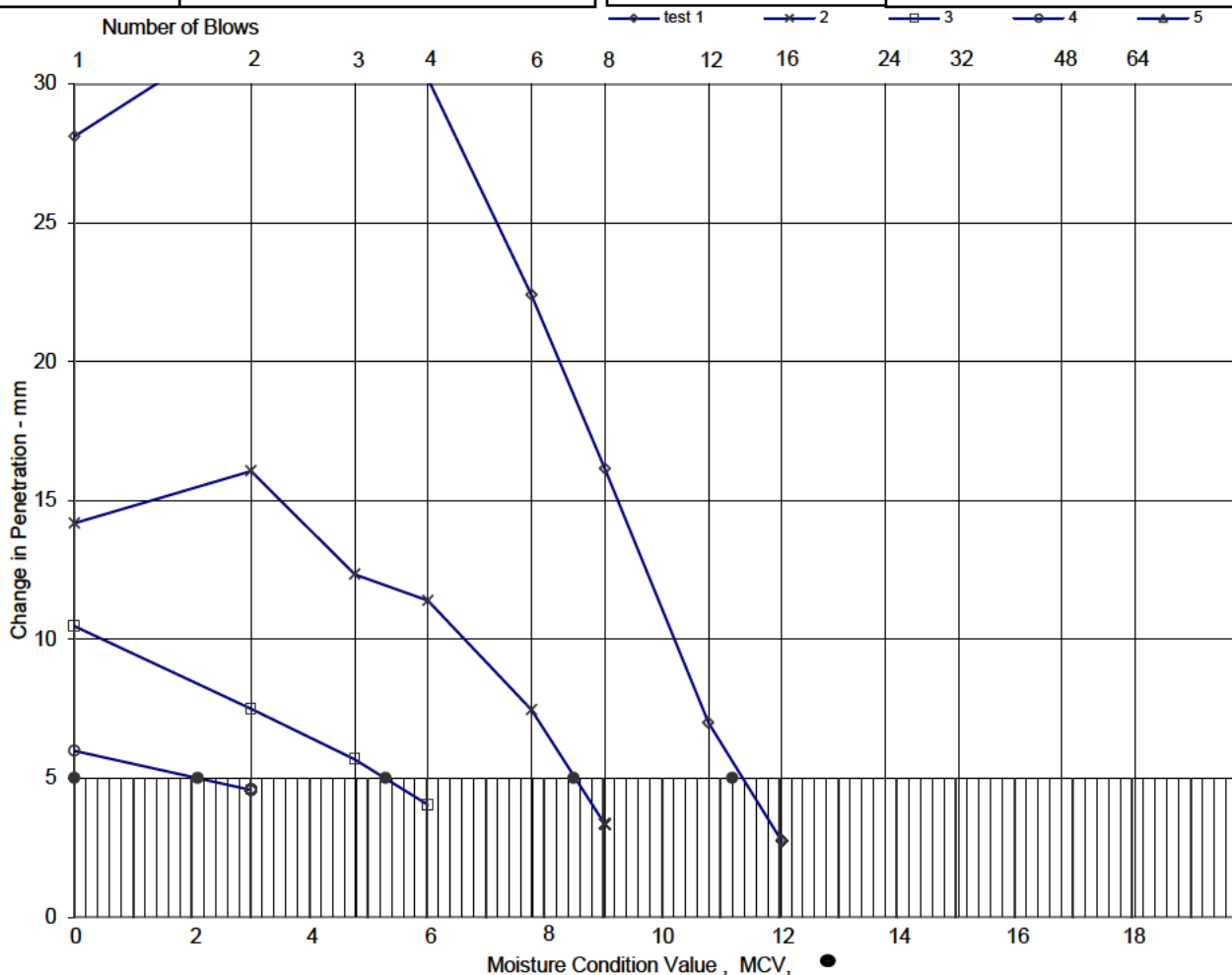
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MOISTURE CONDITION VALUE (MCV) / MOISTURE CONTENT

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-08
	A9031-19-20191126042408	Sample Depth (m BGL)	4.65 - 5.20
		Sample Type and No	B17
		Specimen Ref	



Test No	* ineffective / invalid point	1	2	3	4	*
Moisture Condition Value		11.2	8.5	5.3	2.1	
Moisture Content	%	25.0	28.0	32.0	35.0	
Bulk density after test	Mg/m³	2.11	1.58	1.50	1.44	
Dry density after test	Mg/m³	1.69	1.23	1.14	1.06	
Vane shear strength	kPa	30	28	24	20	

Soil description	Grey and reddish brown slightly sandy CLAY.
Procedure / Preparation	using single sample
Remarks	

Initial moisture content <20mm	%	24.5
Material retained on 20mm sieve	%	0

Method of determining MCV
Steepest straight line

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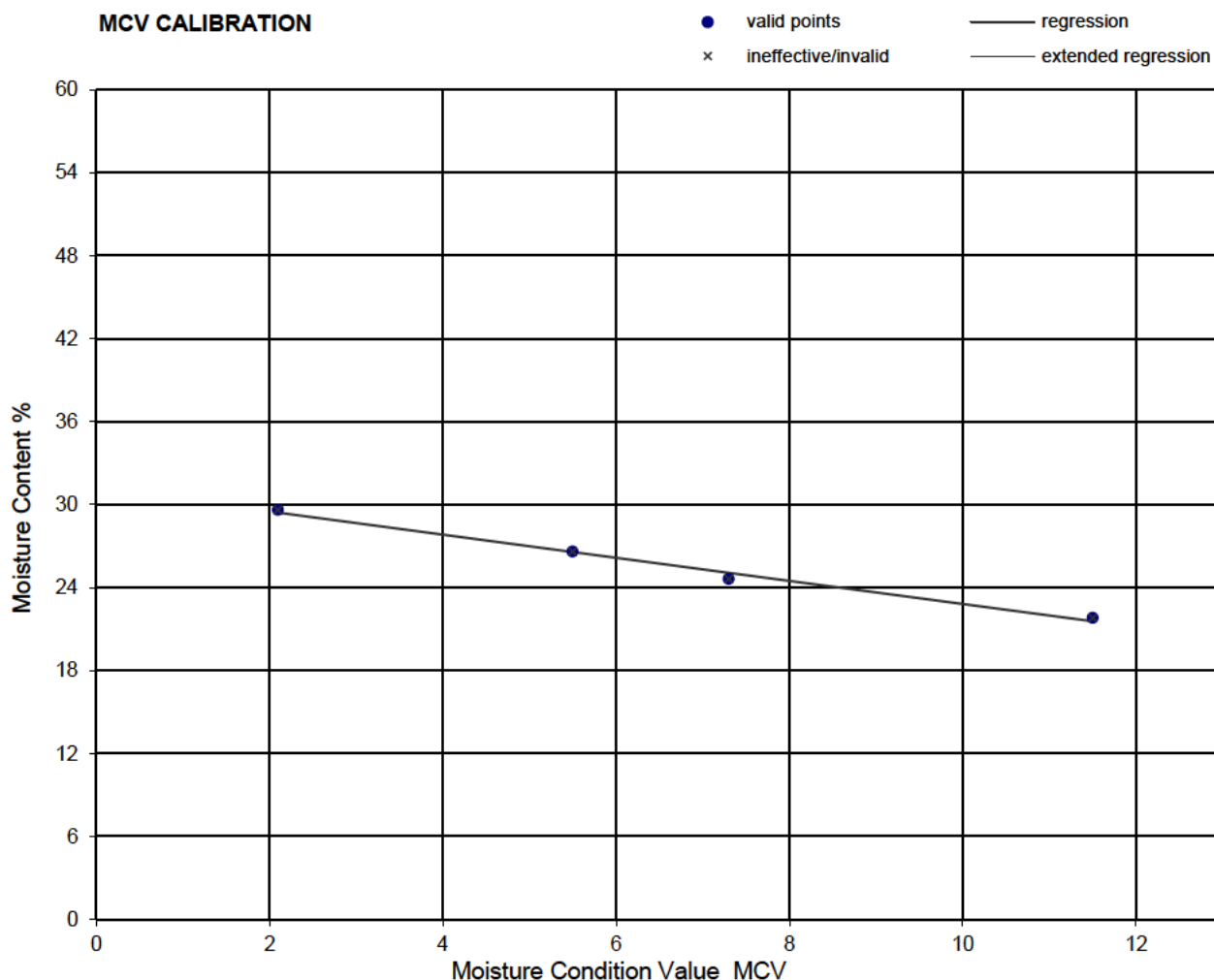
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MOISTURE CONDITION VALUE (MCV) / MOISTURE CONTENT

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-08
	A9031-1920191205104621	Sample Depth (m BGL)	8.20 - 8.65
		Sample Type and No	B29
		Specimen Ref	



Characteristics of calibration line (determined using linear regression)	
Intercept	31.2
Slope	-0.84
Sensitivity (Change in MCV per 1% moisture content)	1.20
Correlation (proximity of test points to regression line)	-1.00
Method of interpretation of MCV	Steepest straight line

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Figure
MCVREL

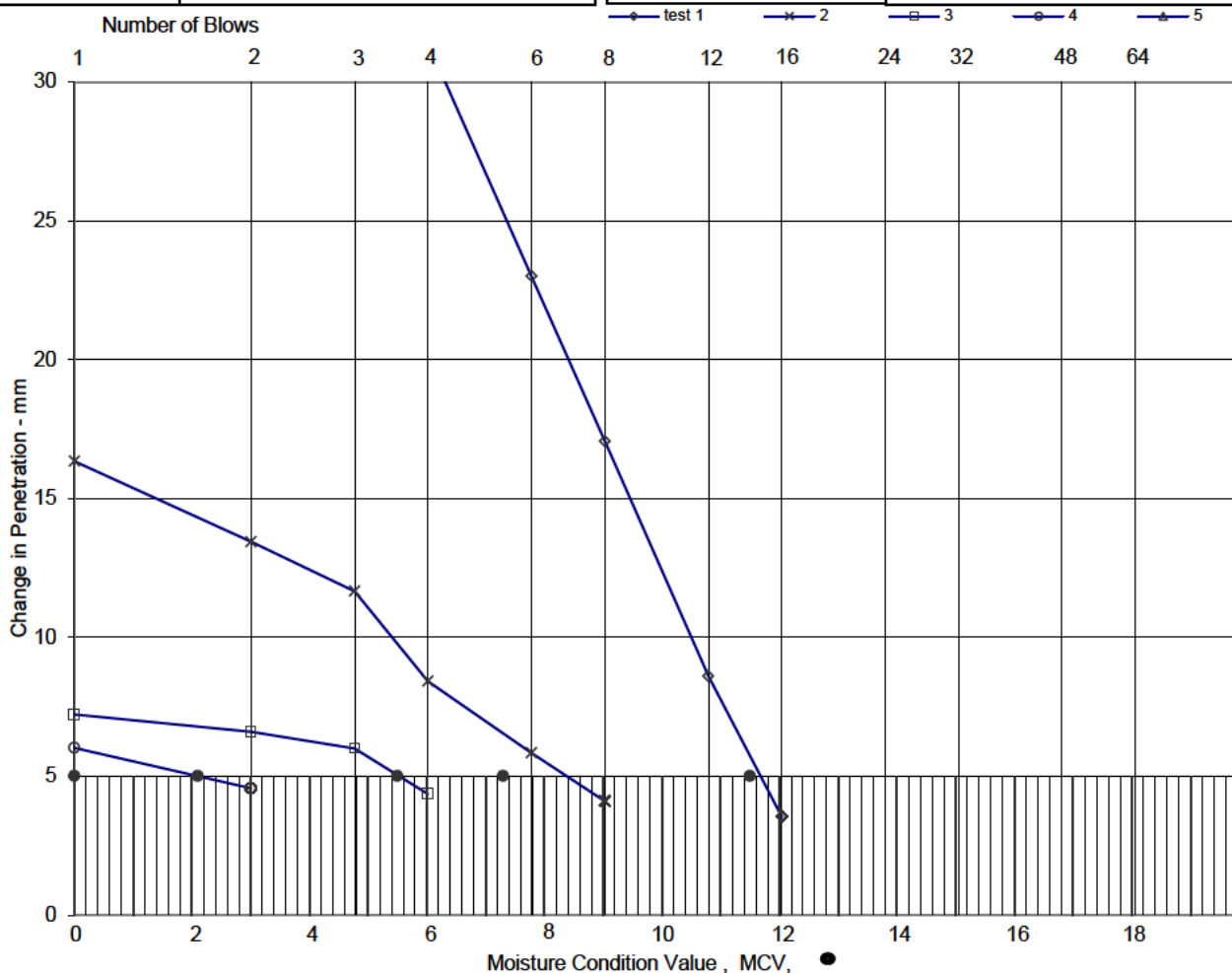
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MOISTURE CONDITION VALUE (MCV) / MOISTURE CONTENT

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-08
	A9031-1920191205104621	Sample Depth (m BGL)	8.20 - 8.65
		Sample Type and No	B29
		Specimen Ref	



Test No	* ineffective / invalid point	1	2	3	4	*
Moisture Condition Value		11.5	7.3	5.5	2.1	
Moisture Content	%	22.0	25.0	27.0	30.0	
Bulk density after test	Mg/m ³	2.16	1.47	1.40	1.54	
Dry density after test	Mg/m ³	1.77	1.18	1.11	1.19	
Vane shear strength	kPa	72	68	64	56	

Soil description	Brown mottled grey slightly sandy CLAY.
Procedure / Preparation	using single sample
Remarks	

Initial moisture content <20mm	%	21.8
Material retained on 20mm sieve	%	0

Method of determining MCV
Steepest straight line

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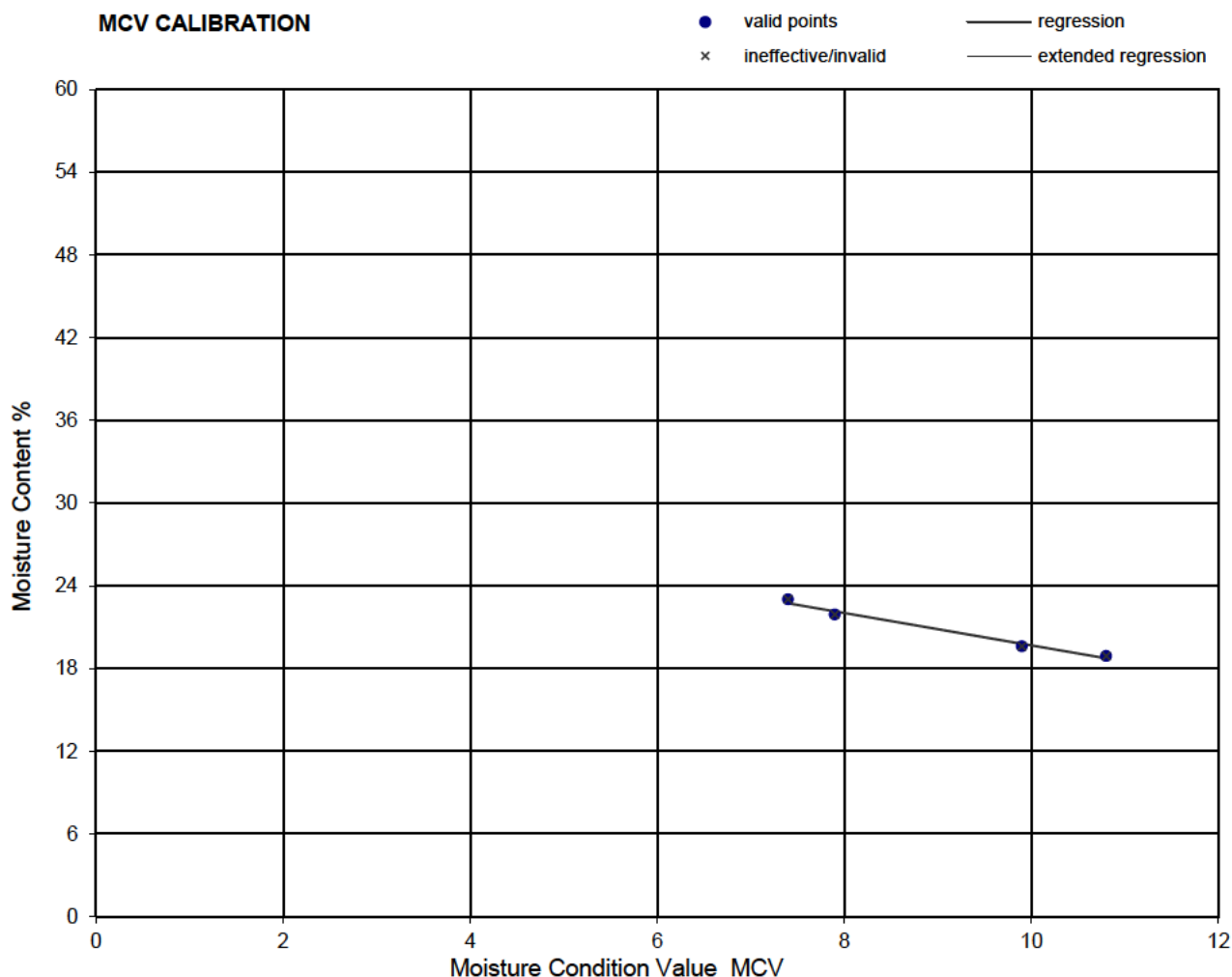
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MOISTURE CONDITION VALUE (MCV) / MOISTURE CONTENT

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-09
	A9031-19-20191129110857	Sample Depth (m BGL)	6.50 - 6.95
		Sample Type and No	B24
		Specimen Ref	



Characteristics of calibration line (determined using linear regression)	
Intercept	31.5
Slope	-1.18
Sensitivity (Change in MCV per 1% moisture content)	0.85
Correlation (proximity of test points to regression line)	-0.99
Method of interpretation of MCV	Steepest straight line

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Figure
MCVREL

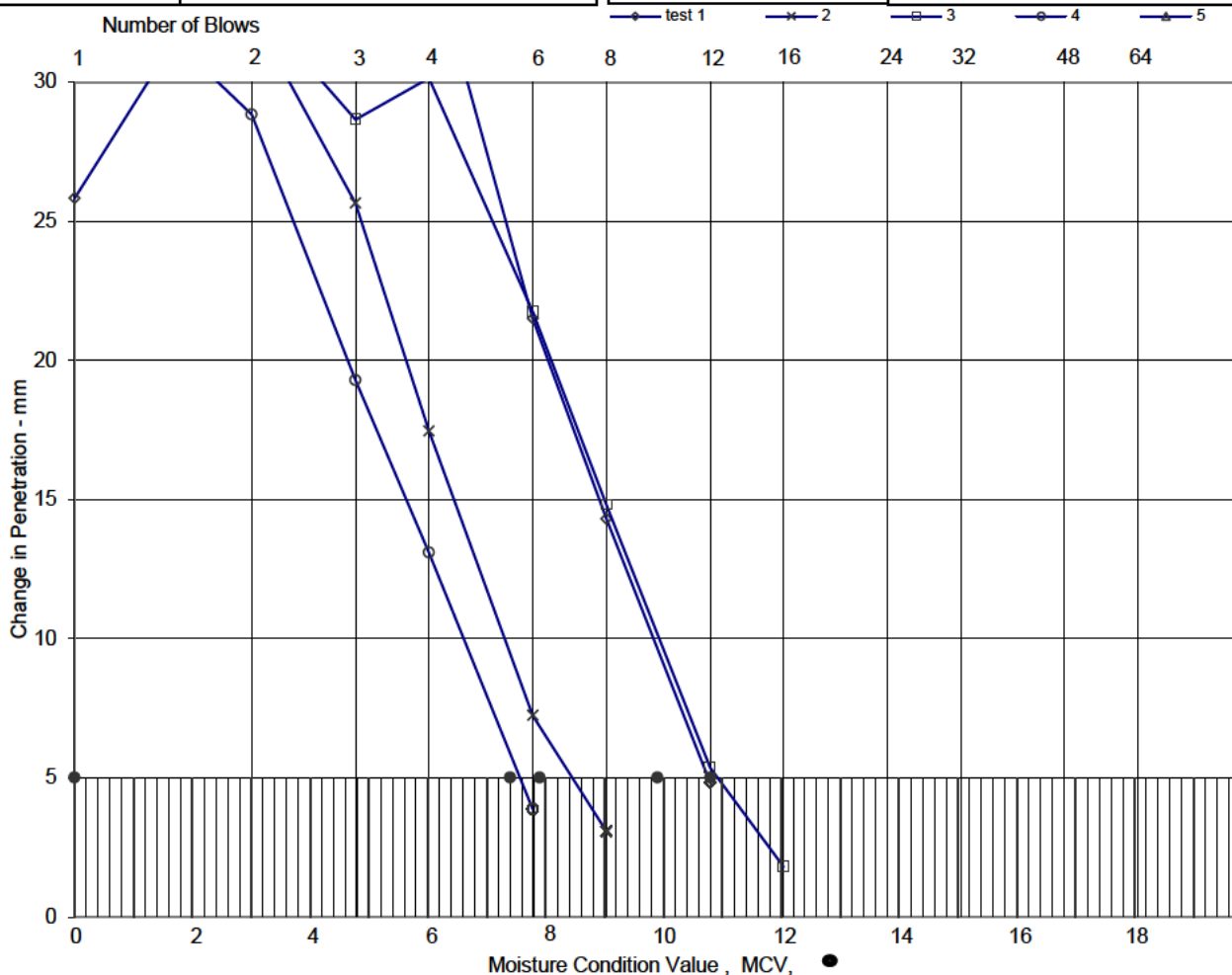
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MOISTURE CONDITION VALUE (MCV) / MOISTURE CONTENT

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-09
	A9031-19-20191129110857	Sample Depth (m BGL)	6.50 - 6.95
		Sample Type and No	B24
		Specimen Ref	



Test No	* ineffective / invalid point	1	2	3	4	*
Moisture Condition Value		9.9	7.9	10.8	7.4	
Moisture Content	%	20.0	22.0	19.0	23.0	
Bulk density after test	Mg/m ³	2.15	2.06	2.15	2.09	
Dry density after test	Mg/m ³	1.80	1.69	1.81	1.70	
Vane shear strength	kPa	62	40	68	48	

Soil description	Reddish brown slightly sandy CLAY.
Procedure / Preparation	using single sample
Remarks	

Initial moisture content <20mm	%	
Material retained on 20mm sieve	%	0

Method of determining MCV	
Steepest straight line	

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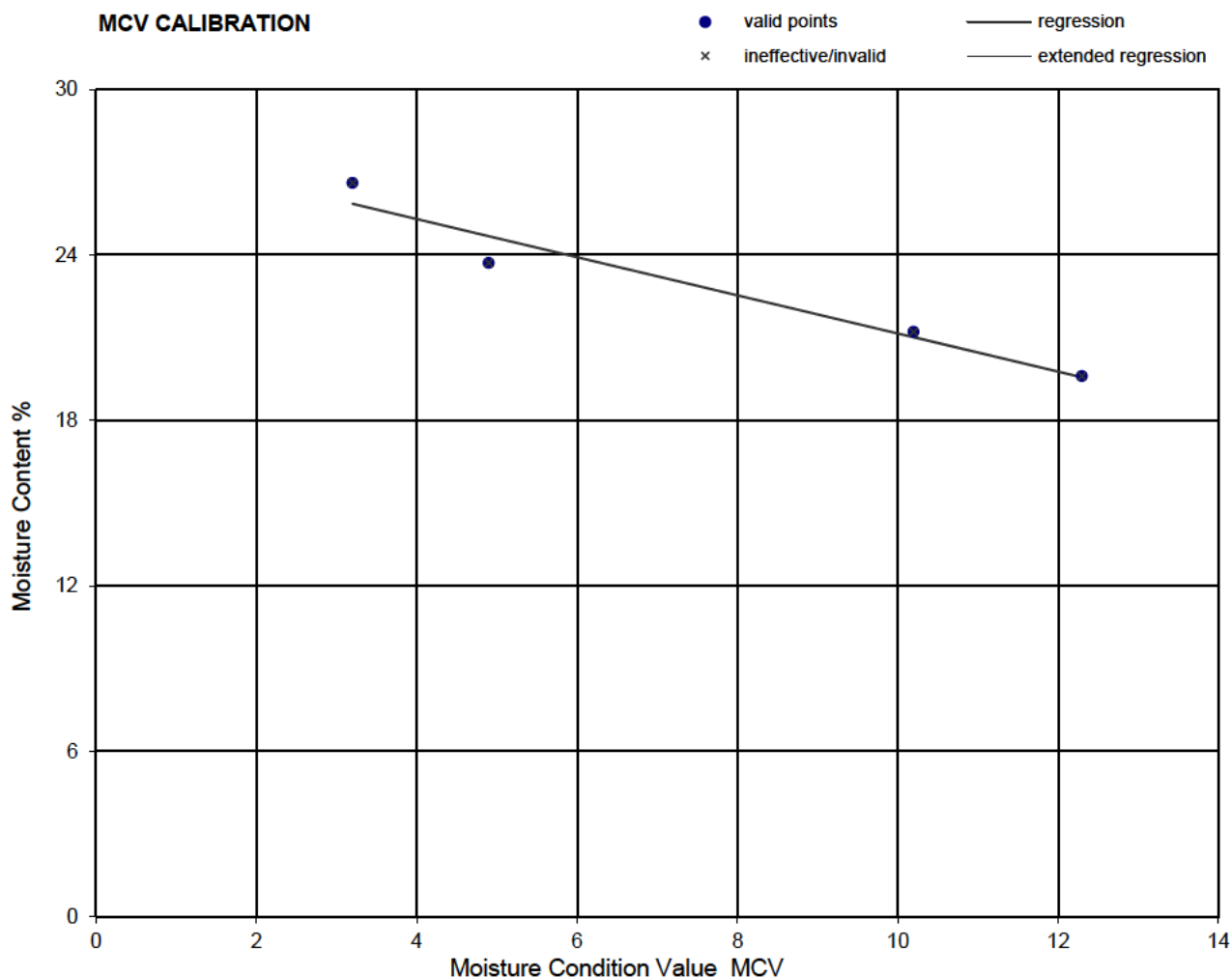
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MOISTURE CONDITION VALUE (MCV) / MOISTURE CONTENT

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-09
	A9031-19-20191129111230	Sample Depth (m BGL)	8.65 - 9.20
		Sample Type and No	B31
		Specimen Ref	



Characteristics of calibration line (determined using linear regression)	
Intercept	28.1
Slope	-0.69
Sensitivity (Change in MCV per 1% moisture content)	1.45
Correlation (proximity of test points to regression line)	-0.97
Method of interpretation of MCV	Steepest straight line

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Figure
MCVREL

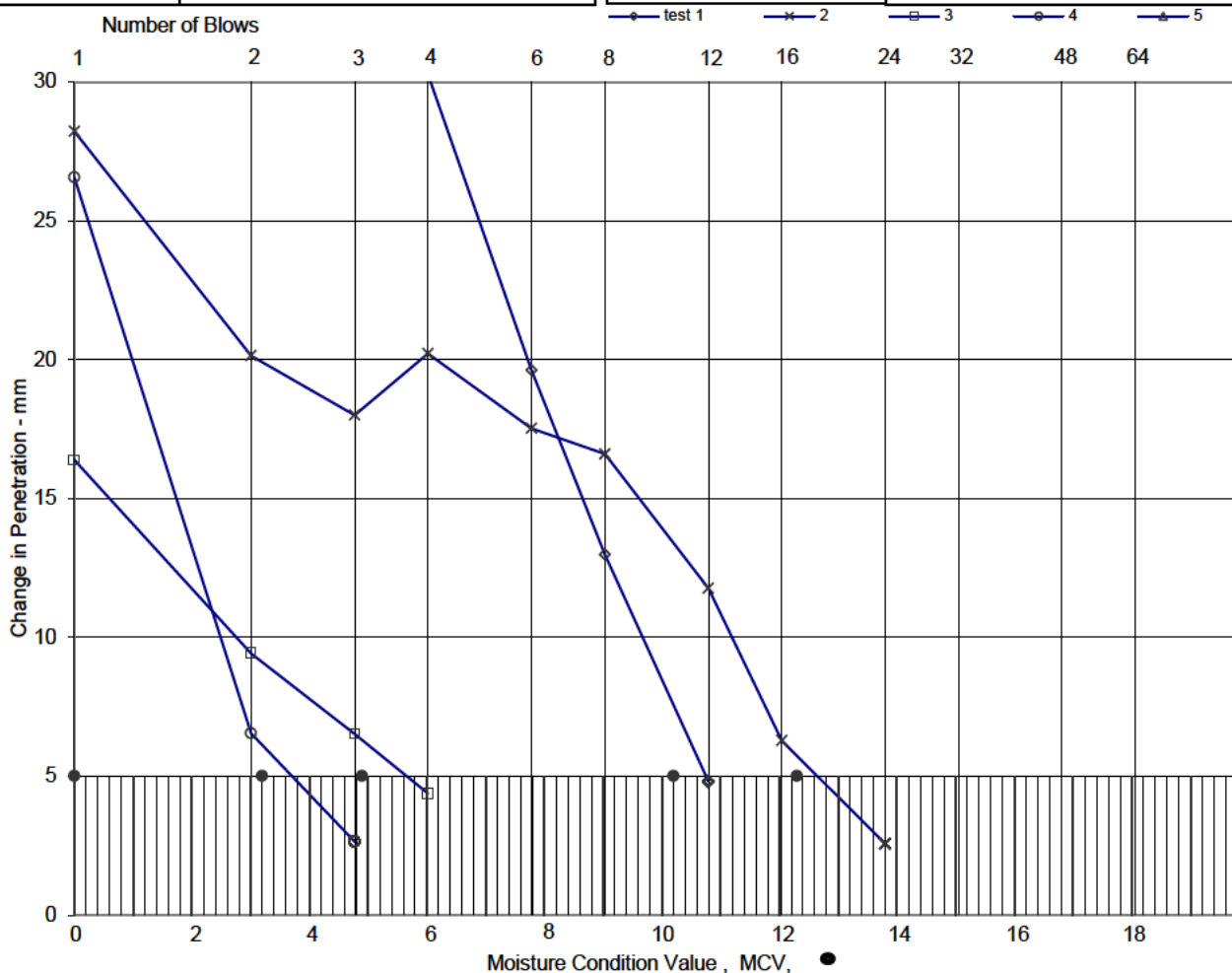
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MOISTURE CONDITION VALUE (MCV) / MOISTURE CONTENT

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-09
	A9031-19-20191129111230	Sample Depth (m BGL)	8.65 - 9.20
		Sample Type and No	B31
		Specimen Ref	



Test No	* ineffective / invalid point	1	2	3	4	*
Moisture Condition Value		10.2	12.3	4.9	3.2	
Moisture Content	%	21.0	20.0	24.0	27.0	
Bulk density after test	Mg/m ³	1.79	1.60	1.33	1.44	
Dry density after test	Mg/m ³	1.48	1.34	1.08	1.14	
Vane shear strength	kPa	66	80	62	58	

Soil description	Brown slightly sandy CLAY.
Procedure / Preparation	using single sample
Remarks	

Initial moisture content <20mm	%	21.2
Material retained on 20mm sieve	%	0

Method of determining MCV
Steepest straight line

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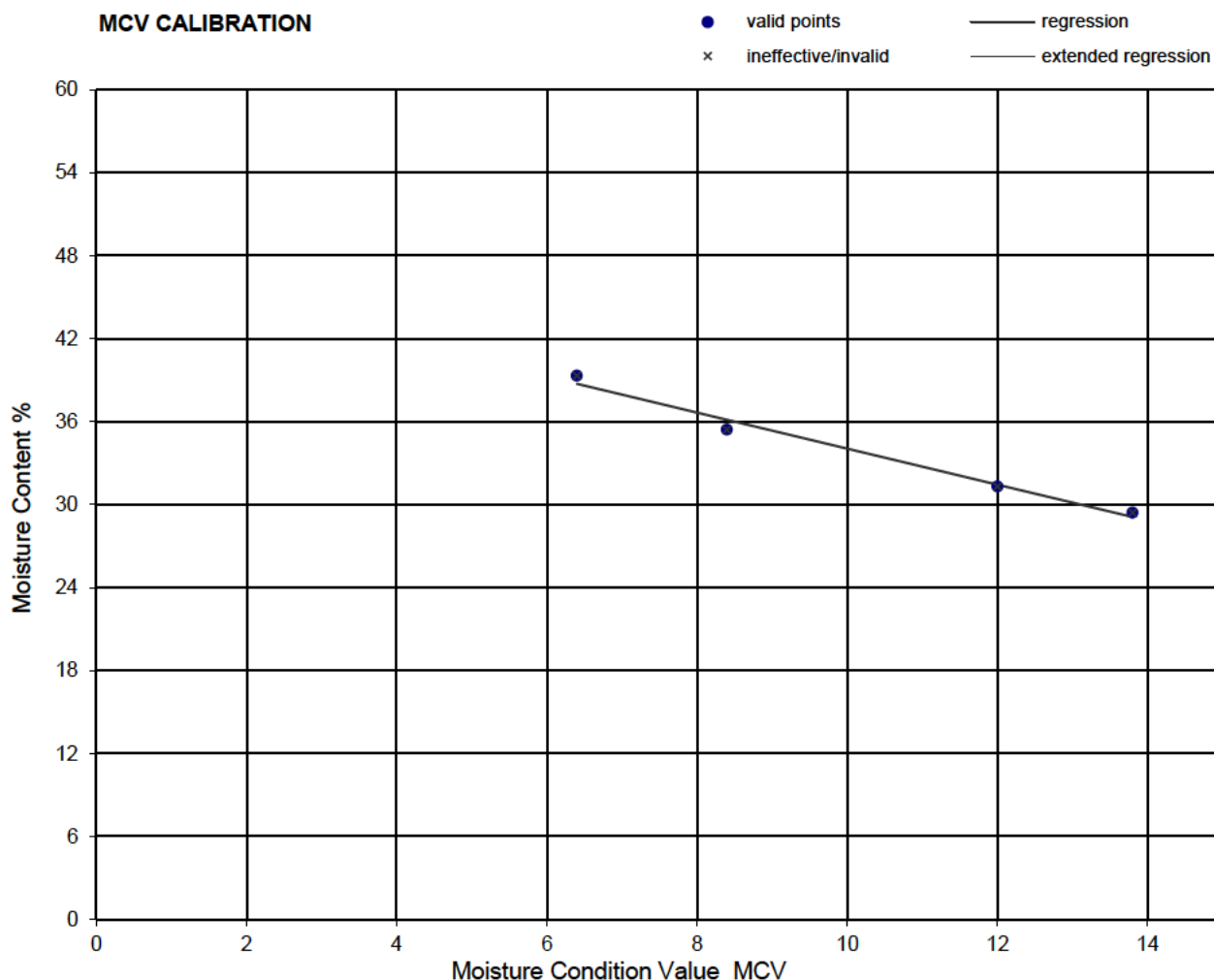
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MOISTURE CONDITION VALUE (MCV) / MOISTURE CONTENT

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-13A
	A9031-1920191127033323	Sample Depth (m BGL)	0.50 - 0.80
		Sample Type and No	B4
		Specimen Ref	



Characteristics of calibration line (determined using linear regression)	
Intercept	47.1
Slope	-1.30
Sensitivity (Change in MCV per 1% moisture content)	0.77
Correlation (proximity of test points to regression line)	-0.99
Method of interpretation of MCV	Steepest straight line

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Figure
MCVREL

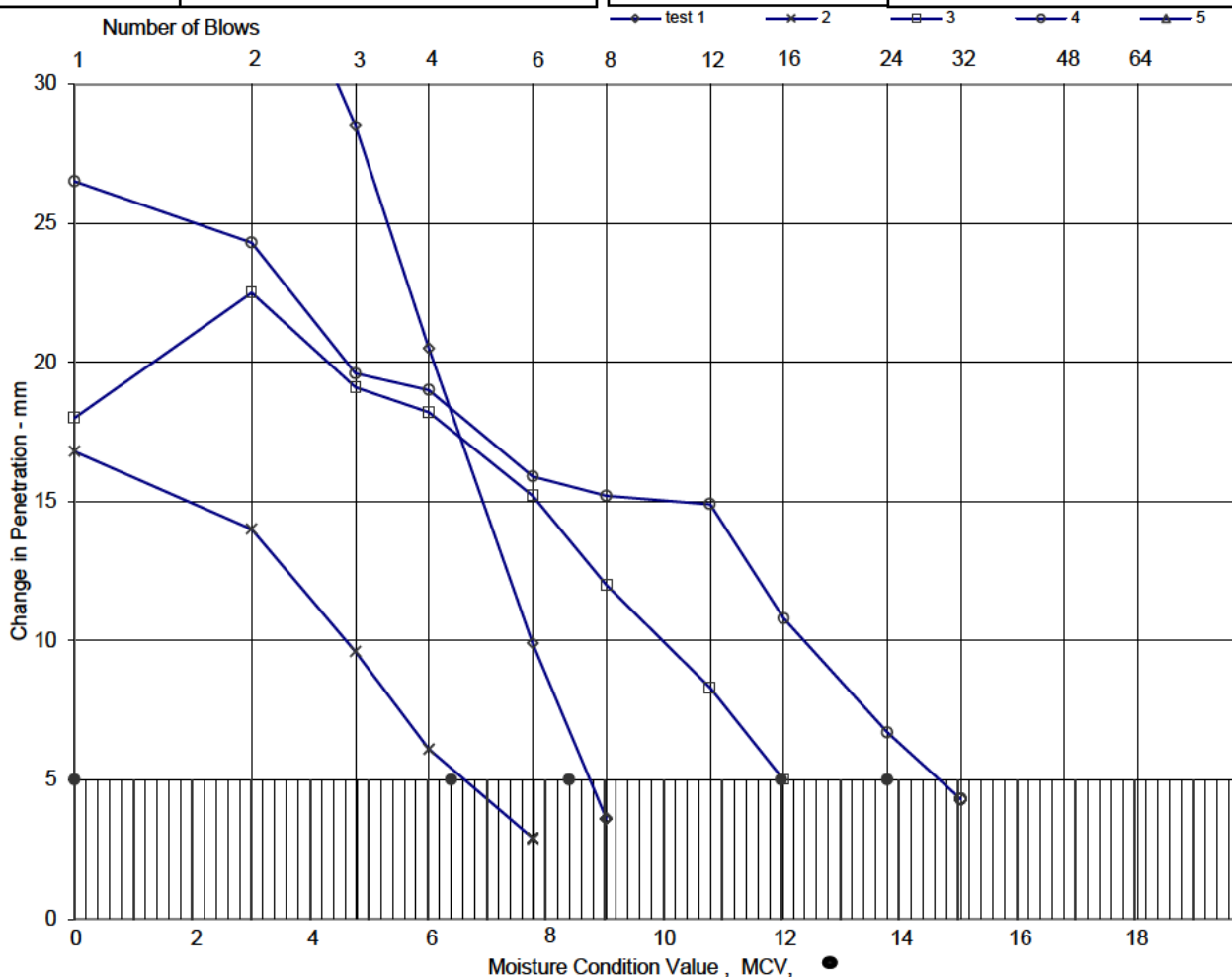
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MOISTURE CONDITION VALUE (MCV) / MOISTURE CONTENT

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-13A
	A9031-1920191127033323	Sample Depth (m BGL)	0.50 - 0.80
		Sample Type and No	B4
		Specimen Ref	



Test No	* ineffective / invalid point	1	2	3	4	*
Moisture Condition Value		8.4	6.4	12.0	13.8	
Moisture Content	%	35.0	39.0	31.0	29.0	
Bulk density after test	Mg/m³	1.85	1.50	1.68	1.91	
Dry density after test	Mg/m³	1.37	1.08	1.28	1.48	

Soil description	Brown slightly sandy CLAY.
Procedure / Preparation	0
Remarks	

Initial moisture content <20mm	%	35.4
Material retained on 20mm sieve	%	0

Method of determining MCV
Steepest straight line

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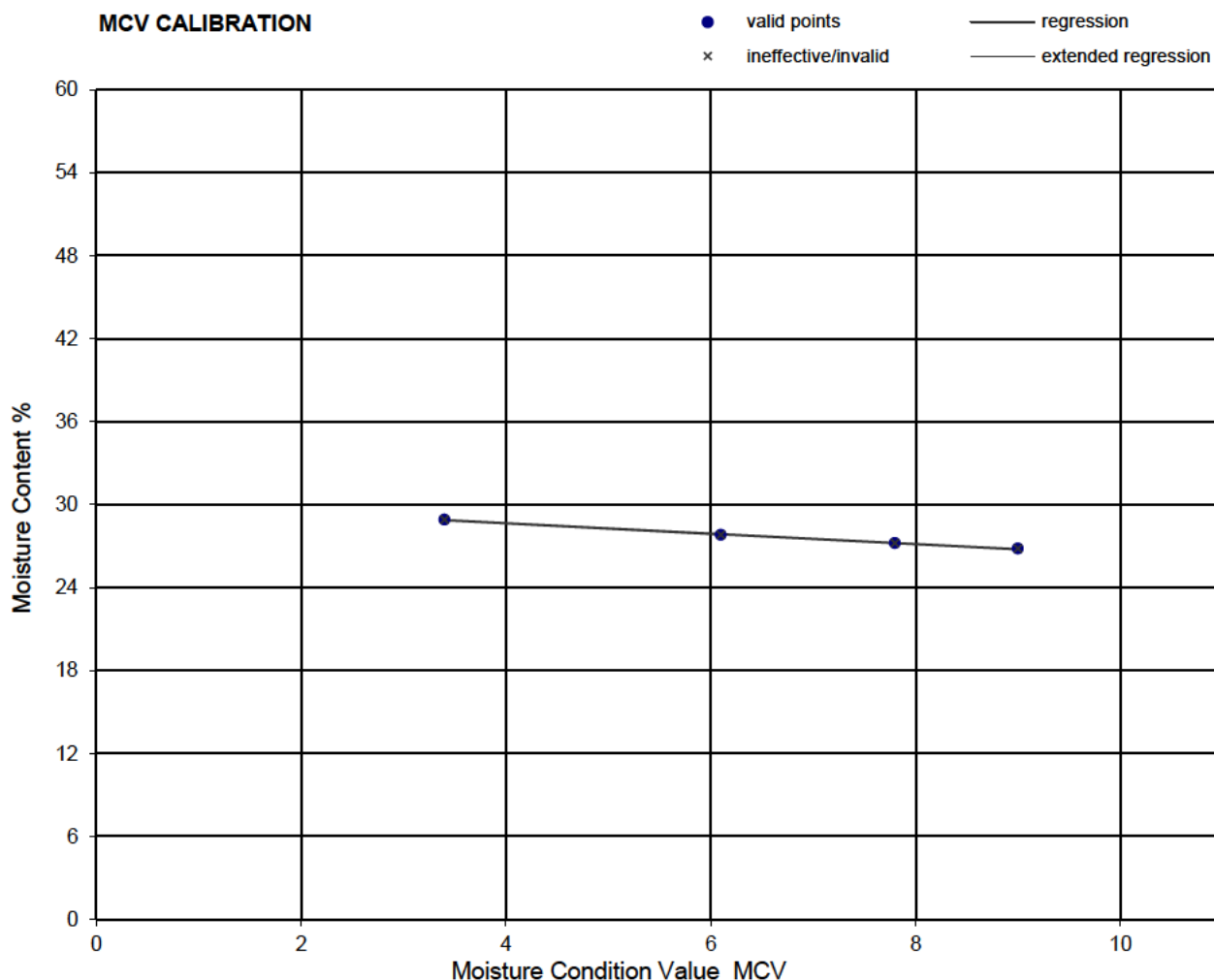
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MOISTURE CONDITION VALUE (MCV) / MOISTURE CONTENT

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-13A
	A9031-1920191127033838	Sample Depth (m BGL)	5.00 - 5.50
		Sample Type and No	B24
		Specimen Ref	



Characteristics of calibration line (determined using linear regression)	
Intercept	30.1
Slope	-0.38
Sensitivity (Change in MCV per 1% moisture content)	2.66
Correlation (proximity of test points to regression line)	-1.00
Method of interpretation of MCV	Steepest straight line

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Figure
MCVREL

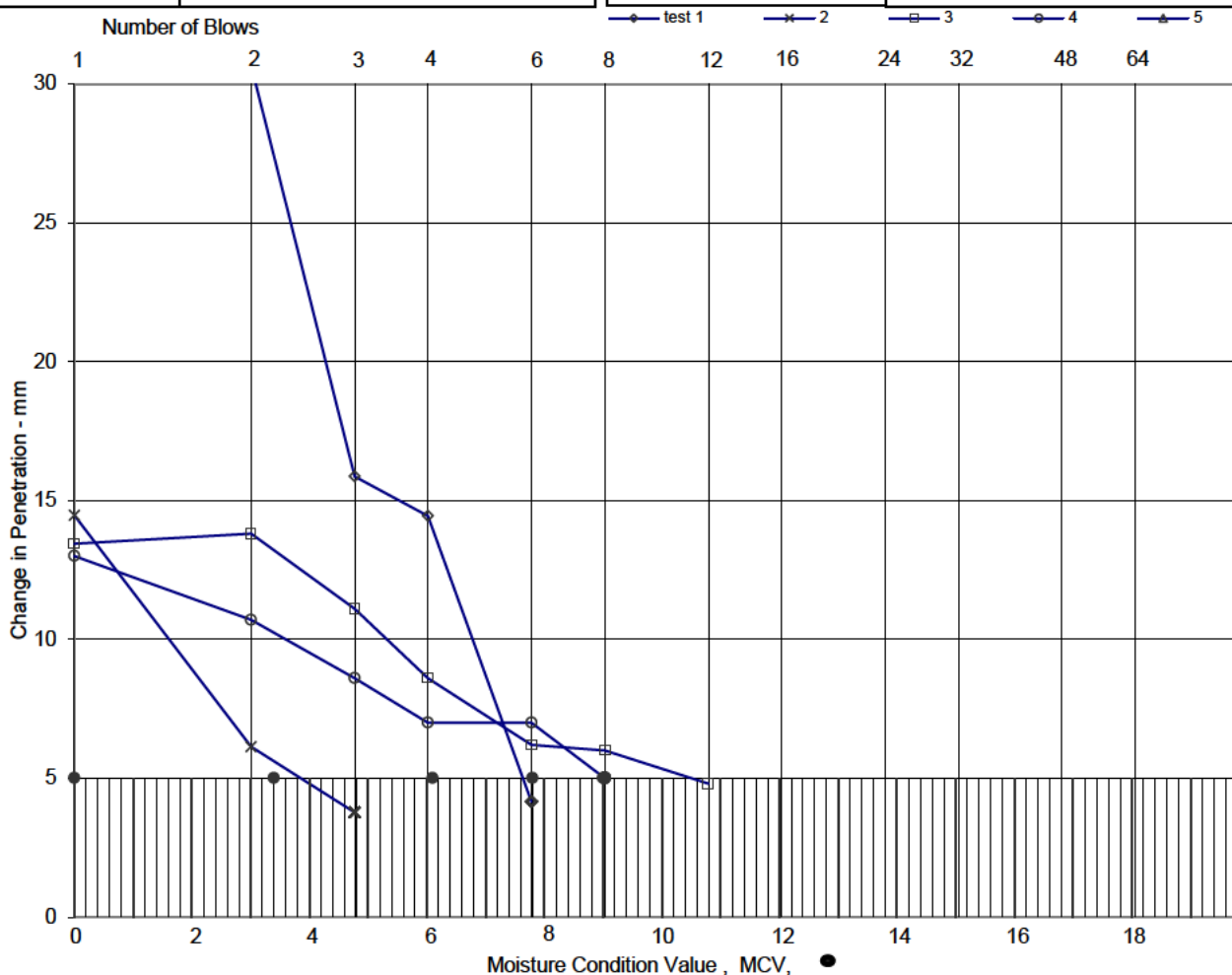
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MOISTURE CONDITION VALUE (MCV) / MOISTURE CONTENT

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-13A
	A9031-1920191127033838	Sample Depth (m BGL)	5.00 - 5.50
		Sample Type and No	B24
		Specimen Ref	



Test No	* ineffective / invalid point	1	2	3	4	*
Moisture Condition Value		6.1	3.4	7.8	9.0	
Moisture Content	%	28.0	29.0	27.0	27.0	
Bulk density after test	Mg/m ³	1.99	1.96	1.99	1.86	
Dry density after test	Mg/m ³	1.56	1.52	1.56	1.47	
Vane shear strength	kPa	40	36	38	42	

Soil description	Brown slightly sandy CLAY.
Procedure / Preparation	using single sample
Remarks	

Initial moisture content <20mm	%	27.4
Material retained on 20mm sieve	%	0

Method of determining MCV
Steepest straight line

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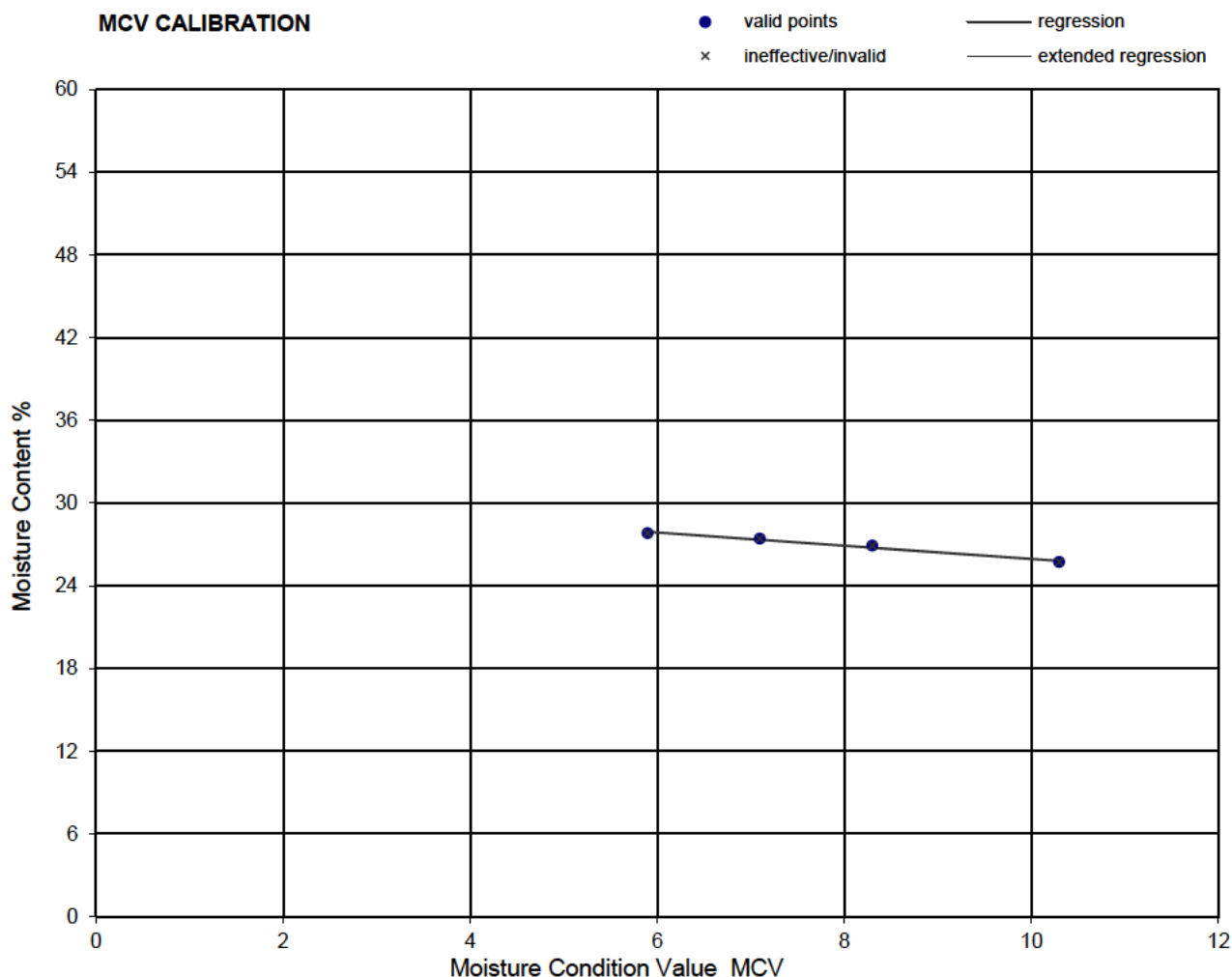
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MOISTURE CONDITION VALUE (MCV) / MOISTURE CONTENT

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-16
	A9031-1920191219120110	Sample Depth (m BGL)	3.50 - 4.00
		Sample Type and No	B8
		Specimen Ref	



Characteristics of calibration line (determined using linear regression)	
Intercept	30.8
Slope	-0.48
Sensitivity (Change in MCV per 1% moisture content)	2.08
Correlation (proximity of test points to regression line)	-0.99
Method of interpretation of MCV	Steepest straight line

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Figure
MCVREL

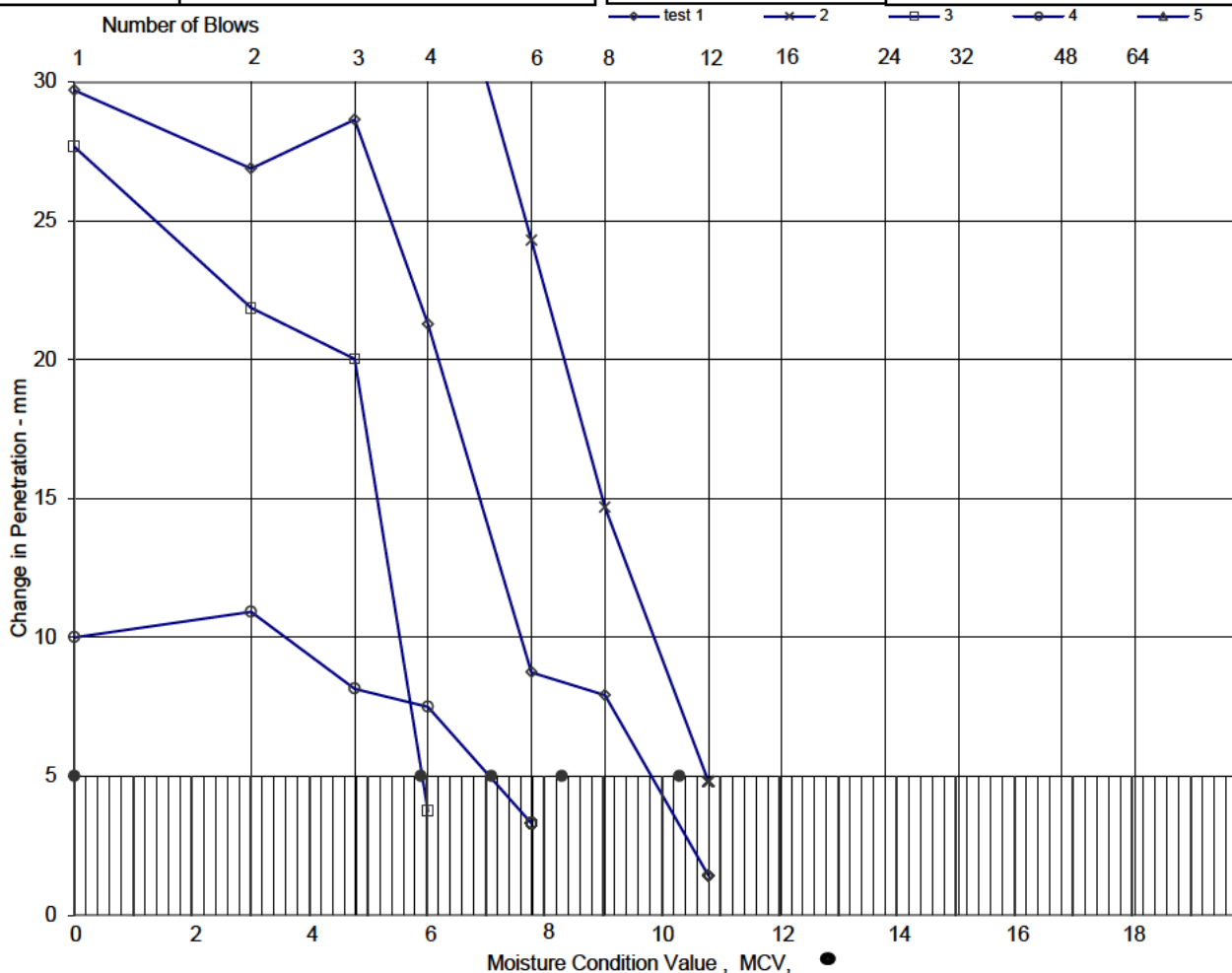
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MOISTURE CONDITION VALUE (MCV) / MOISTURE CONTENT

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-16
	A9031-1920191219120110	Sample Depth (m BGL)	3.50 - 4.00
		Sample Type and No	B8
		Specimen Ref	



Test No	* ineffective / invalid point	1	2	3	4	*
Moisture Condition Value		8.3	10.3	5.9	7.1	
Moisture Content	%	27.0	26.0	28.0	27.0	
Bulk density after test	Mg/m³	2.03	2.06	1.96	1.55	
Dry density after test	Mg/m³	1.60	1.64	1.53	1.22	
Vane shear strength	kPa	30	46	20	16	

Soil description	Brown CLAY
Procedure / Preparation	using single sample
Remarks	

Initial moisture content <20mm	%	26.9
Material retained on 20mm sieve	%	0

Method of determining MCV
Steepest straight line

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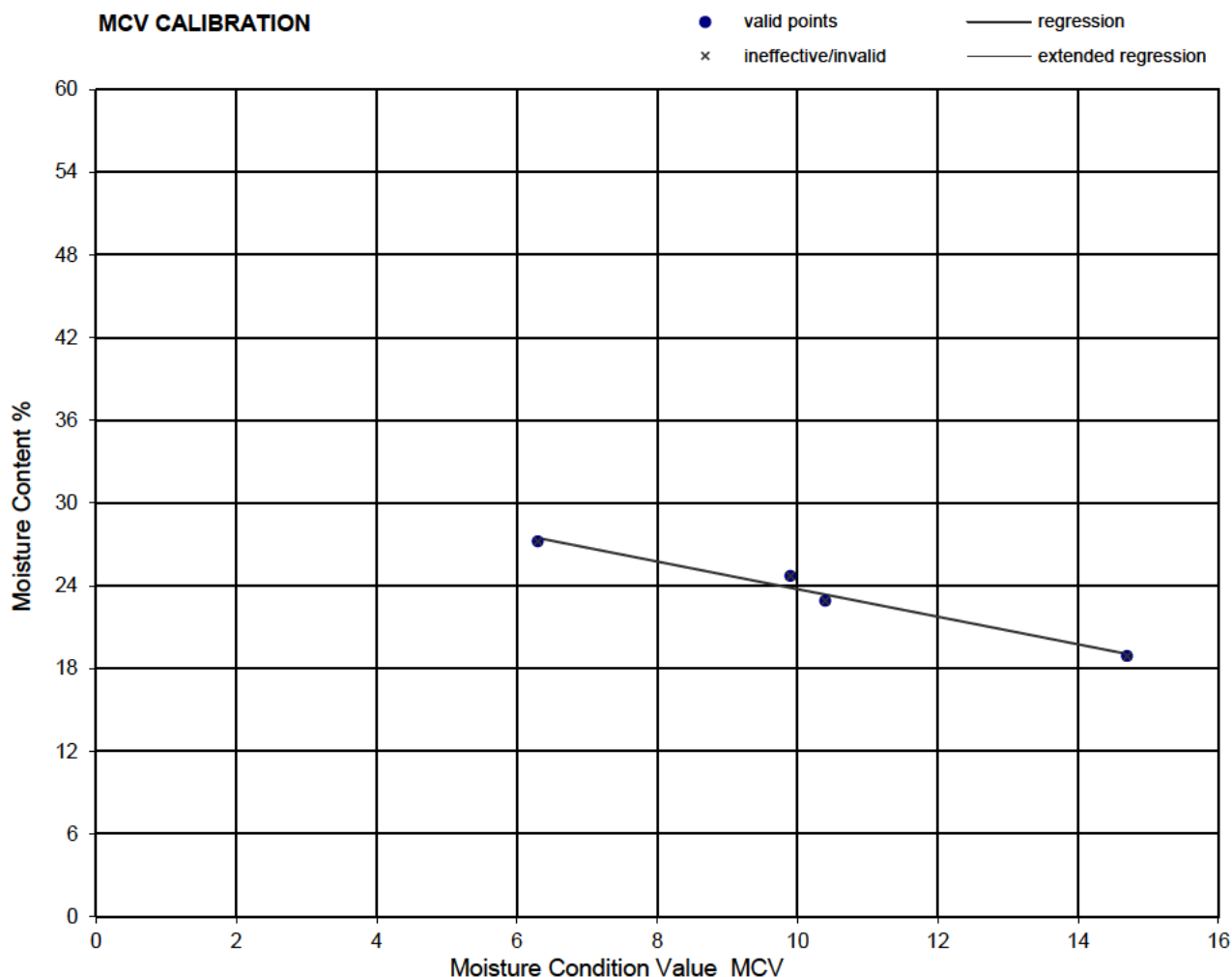
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MOISTURE CONDITION VALUE (MCV) / MOISTURE CONTENT

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-16
	A9031-1920191219022241	Sample Depth (m BGL)	5.50 - 6.00
		Sample Type and No	B16
		Specimen Ref	



Characteristics of calibration line (determined using linear regression)	
Intercept	33.8
Slope	-1.00
Sensitivity (Change in MCV per 1% moisture content)	1.00
Correlation (proximity of test points to regression line)	-0.99
Method of interpretation of MCV	Steepest straight line

The above characteristics are NOT covered by UKAS accreditation to BS1377

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Figure
MCVREL

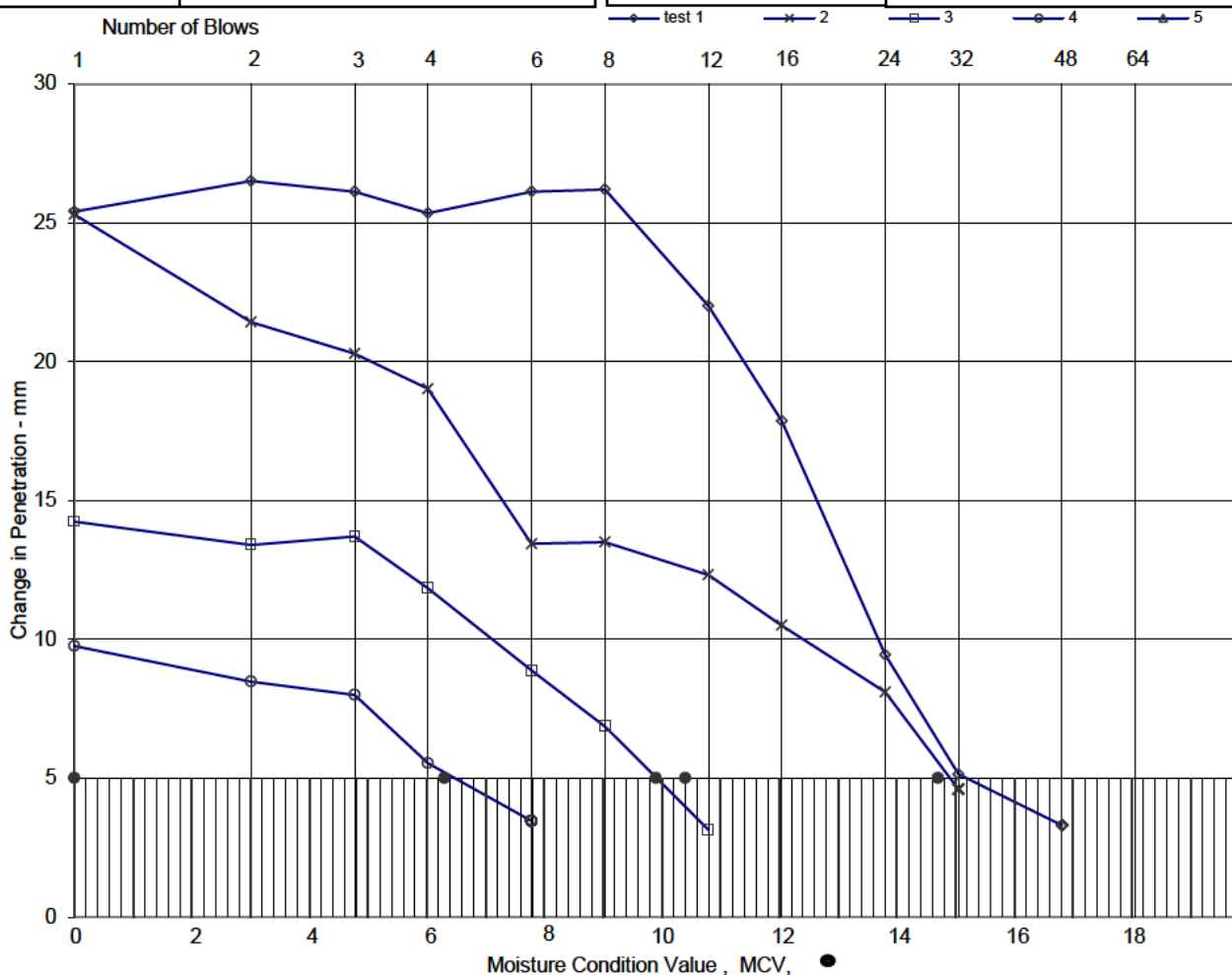
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MOISTURE CONDITION VALUE (MCV) / MOISTURE CONTENT

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-16
	A9031-1920191219022241	Sample Depth (m BGL)	5.50 - 6.00
		Sample Type and No	B16
		Specimen Ref	



Test No	* ineffective / invalid point	1	2	3	4	*
Moisture Condition Value		14.7	10.4	9.9	6.3	
Moisture Content	%	19.0	23.0	25.0	27.0	
Bulk density after test	Mg/m ³	2.09	1.91	1.58	1.47	
Dry density after test	Mg/m ³	1.76	1.55	1.27	1.16	
Vane shear strength	kPa	140	140	118	106	

Soil description	Brown slightly sandy CLAY.
Procedure / Preparation	using single sample
Remarks	

Initial moisture content <20mm	%	18.8
Material retained on 20mm sieve	%	0

Method of determining MCV
Steepest straight line

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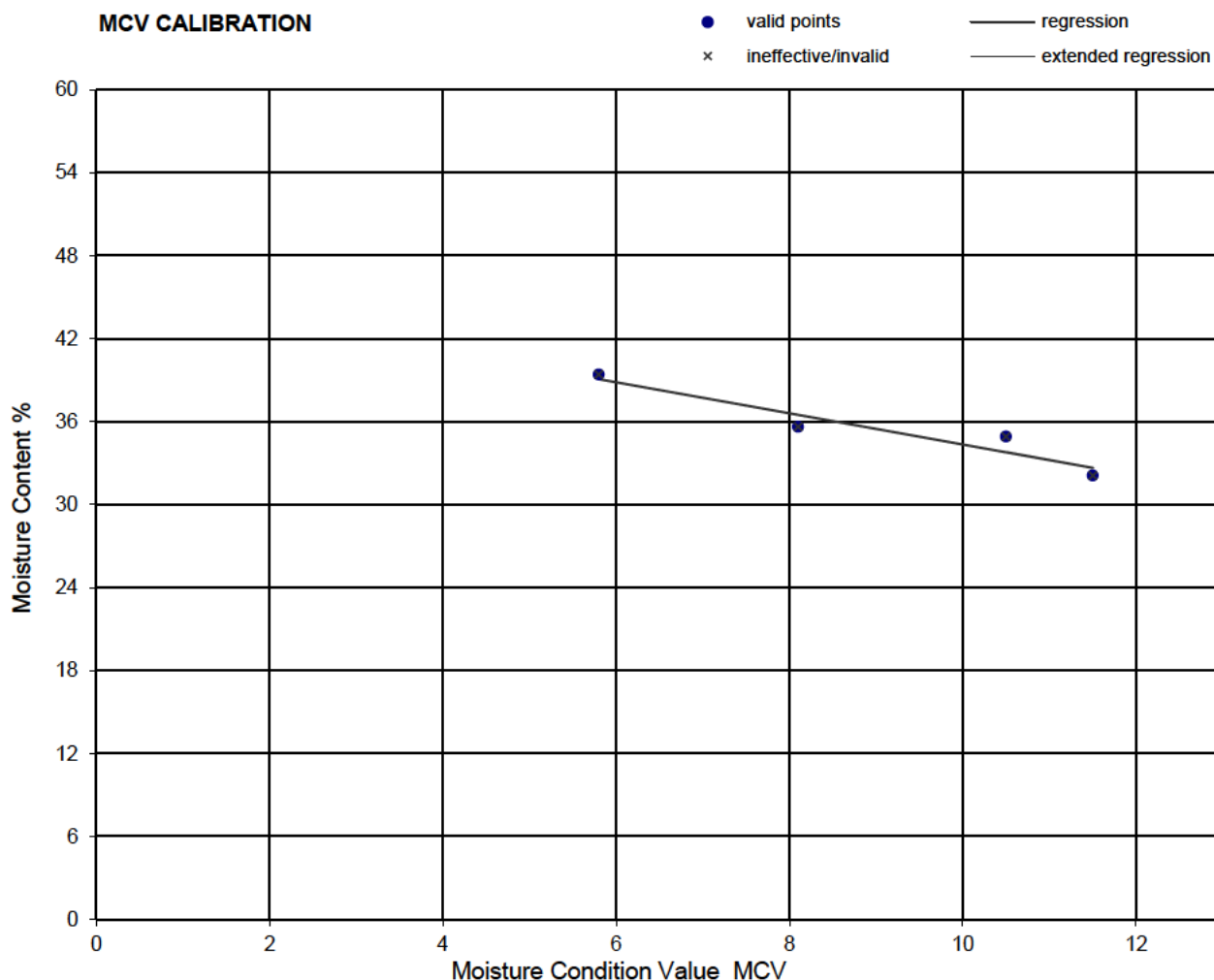
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MOISTURE CONDITION VALUE (MCV) / MOISTURE CONTENT

Sample Details:	SAMPLE ID:	Hole No	ATK-TP-01
	A9031-1920191114114654	Sample Depth (m BGL)	1.00 - 1.20
		Sample Type and No	B8
		Specimen Ref	



Characteristics of calibration line (determined using linear regression)	
Intercept	45.6
Slope	-1.12
Sensitivity (Change in MCV per 1% moisture content)	0.89
Correlation (proximity of test points to regression line)	-0.95
Method of interpretation of MCV	Steepest straight line

The above characteristics are NOT covered by UKAS accreditation to BS1377

QA Ref
SLR 4,5,5
Rev 2.8
Jun 19



Project No A9031-19
Project Name HAVANT THICKET WATER STORAGE

Figure
MCVREL

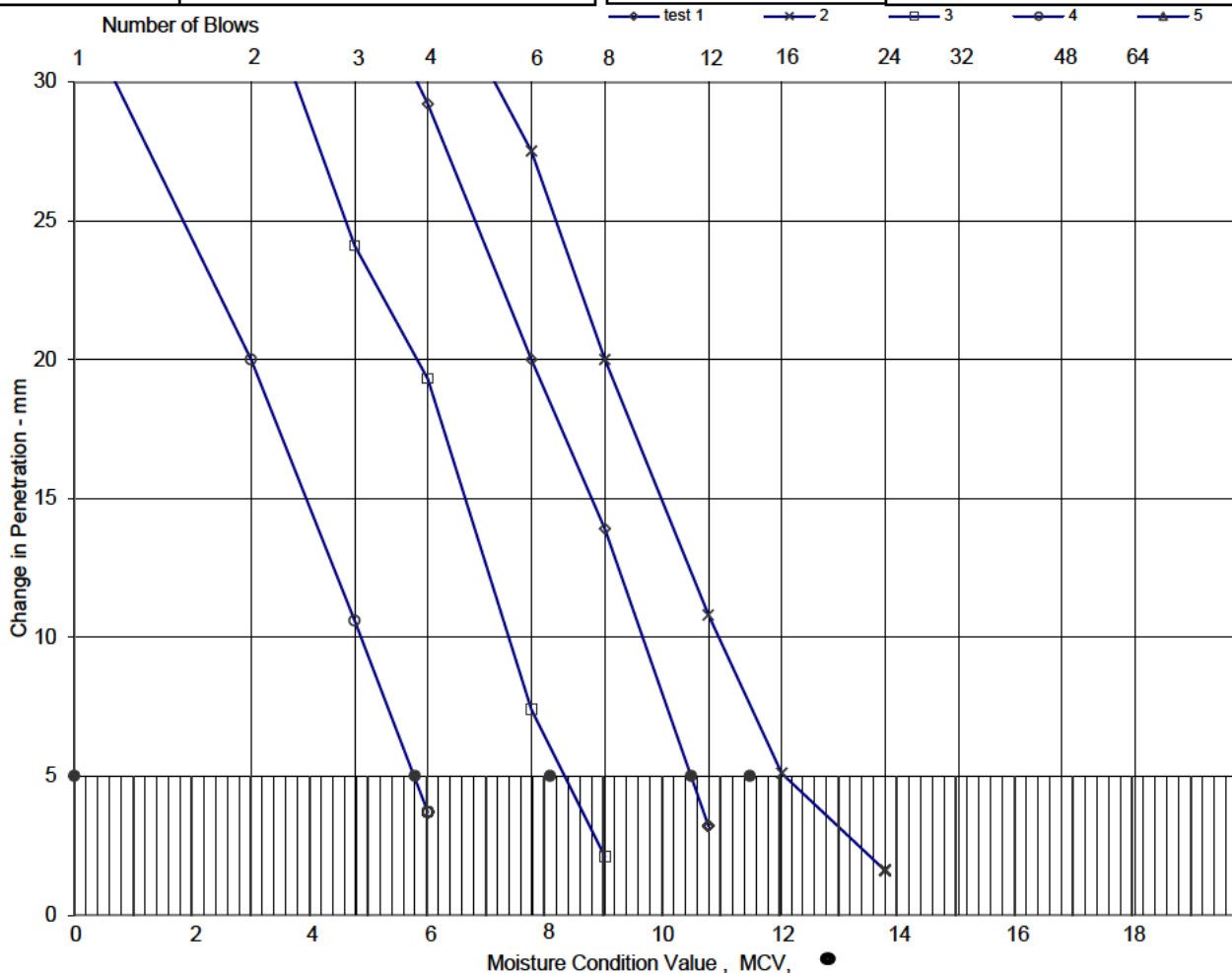
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MOISTURE CONDITION VALUE (MCV) / MOISTURE CONTENT

Sample Details:	SAMPLE ID:	Hole No	ATK-TP-01
	A9031-1920191114114654	Sample Depth (m BGL)	1.00 - 1.20
		Sample Type and No	B8
		Specimen Ref	



Test No	* ineffective / invalid point	1	2	3	4	*
Moisture Condition Value		10.5	11.5	8.1	5.8	
Moisture Content	%	35.0	32.0	36.0	39.0	
Bulk density after test	Mg/m³	1.82	1.90	1.78	1.72	
Dry density after test	Mg/m³	1.35	1.44	1.31	1.23	

Soil description	Brown slightly sandy silty CLAY.
Procedure / Preparation	using single sample
Remarks	

Initial moisture content <20mm	%	34.9
Material retained on 20mm sieve	%	0

Method of determining MCV
Steepest straight line

QA Ref
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Project No A9031-19
Project Name HAVANT THICKET WATER STORAGE

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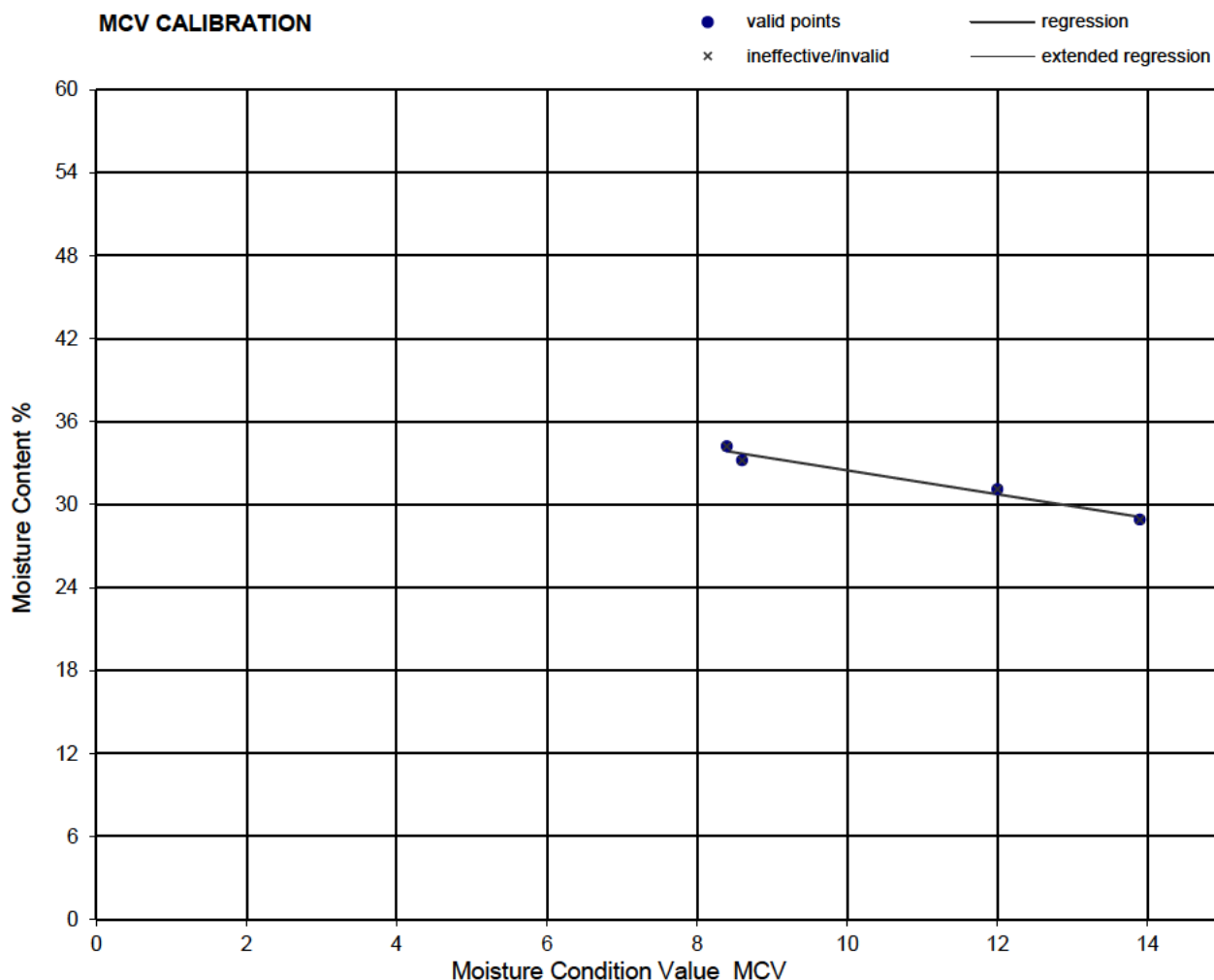
Figure
MCVREL

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MOISTURE CONDITION VALUE (MCV) / MOISTURE CONTENT

Sample Details:	SAMPLE ID:	Hole No	ATK-TP-01
	A9031-1920191114114711	Sample Depth (m BGL)	2.80 - 2.90
		Sample Type and No	B12
		Specimen Ref	



Characteristics of calibration line (determined using linear regression)	
Intercept	41.1
Slope	-0.86
Sensitivity (Change in MCV per 1% moisture content)	1.16
Correlation (proximity of test points to regression line)	-0.98
Method of interpretation of MCV	Steepest straight line

The above characteristics are NOT covered by UKAS accreditation to BS1377

QA Ref
SLR 4,5,5
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Jun 19



Project No A9031-19
Project Name HAVANT THICKET WATER STORAGE

Figure
MCVREL

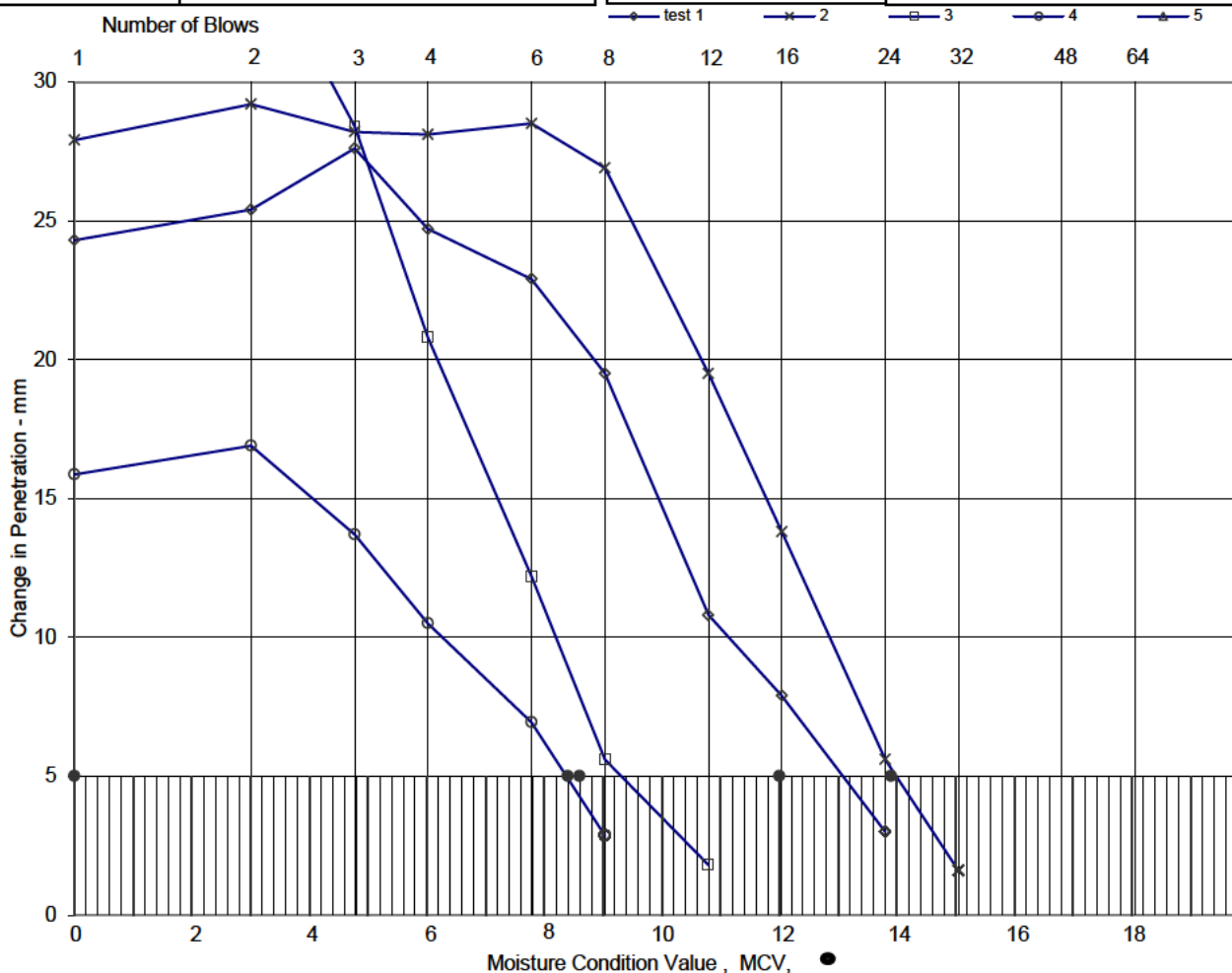
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MOISTURE CONDITION VALUE (MCV) / MOISTURE CONTENT

Sample Details:	SAMPLE ID:	Hole No	ATK-TP-01
	A9031-1920191114114711	Sample Depth (m BGL)	2.80 - 2.90
		Sample Type and No	B12
		Specimen Ref	



Test No	* ineffective / invalid point	1	2	3	4	*
Moisture Condition Value		12.0	13.9	8.6	8.4	
Moisture Content	%	31.0	29.0	33.0	34.0	
Bulk density after test	Mg/m ³	1.62	1.60	1.56	1.36	
Dry density after test	Mg/m ³	1.24	1.24	1.17	1.01	
Vane shear strength	kPa	90	94	50	44	

Soil description	Brown slightly sandy CLAY.
Procedure / Preparation	using single sample
Remarks	

Initial moisture content <20mm	%	
Material retained on 20mm sieve	%	0

Method of determining MCV
Steepest straight line

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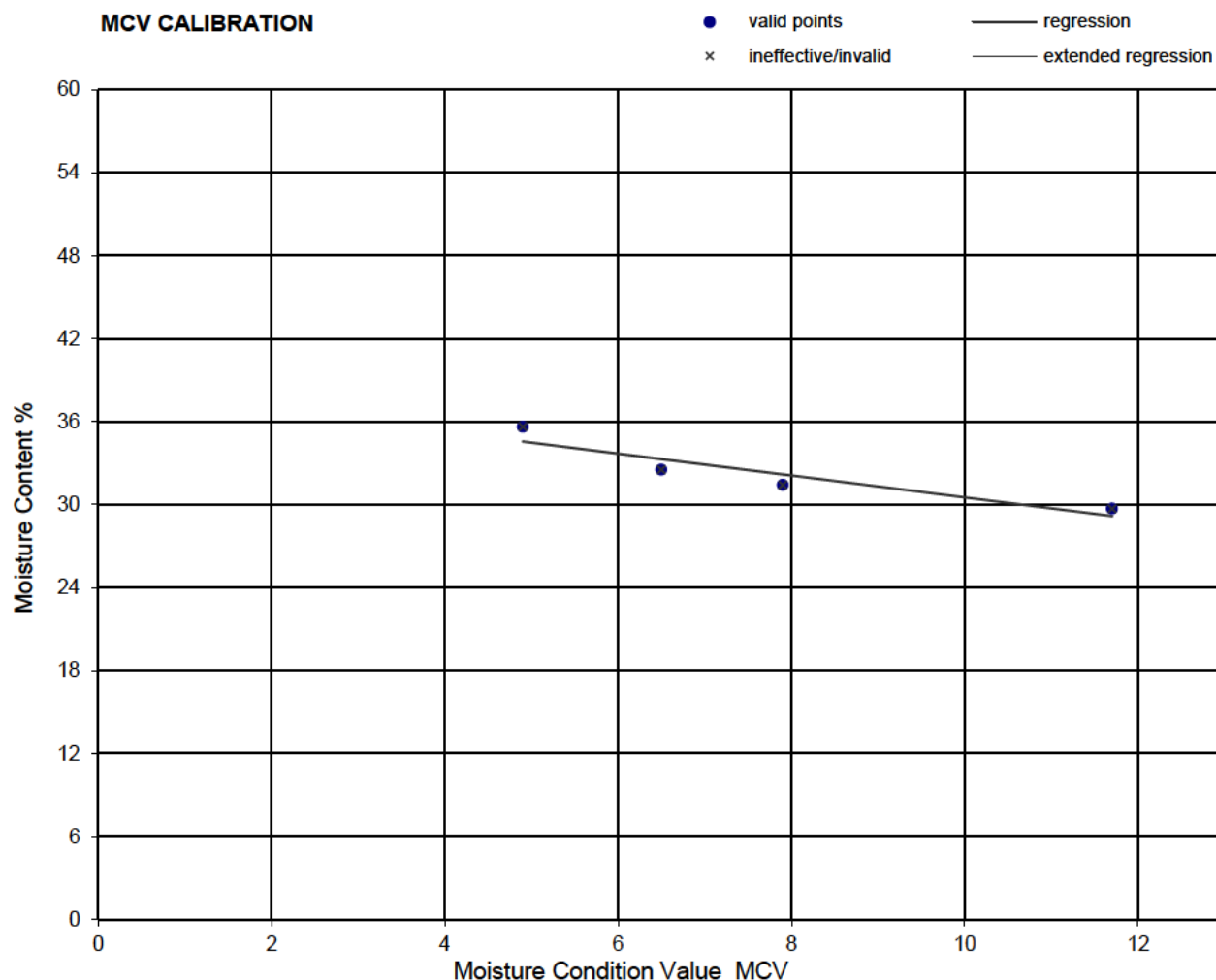
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MOISTURE CONDITION VALUE (MCV) / MOISTURE CONTENT

Sample Details:	SAMPLE ID:	Hole No	ATK-TP-01
	A9031-1920191114114717	Sample Depth (m BGL)	3.00 - 3.10
		Sample Type and No	B14
		Specimen Ref	



Characteristics of calibration line (determined using linear regression)	
Intercept	38.4
Slope	-0.79
Sensitivity (Change in MCV per 1% moisture content)	1.26
Correlation (proximity of test points to regression line)	-0.93
Method of interpretation of MCV	Steepest straight line

The above characteristics are NOT covered by UKAS accreditation to BS1377

QA Ref
SLR 4,5,5
Rev 2.8
Jun 19



Project No A9031-19
Project Name HAVANT THICKET WATER STORAGE

Figure
MCVREL

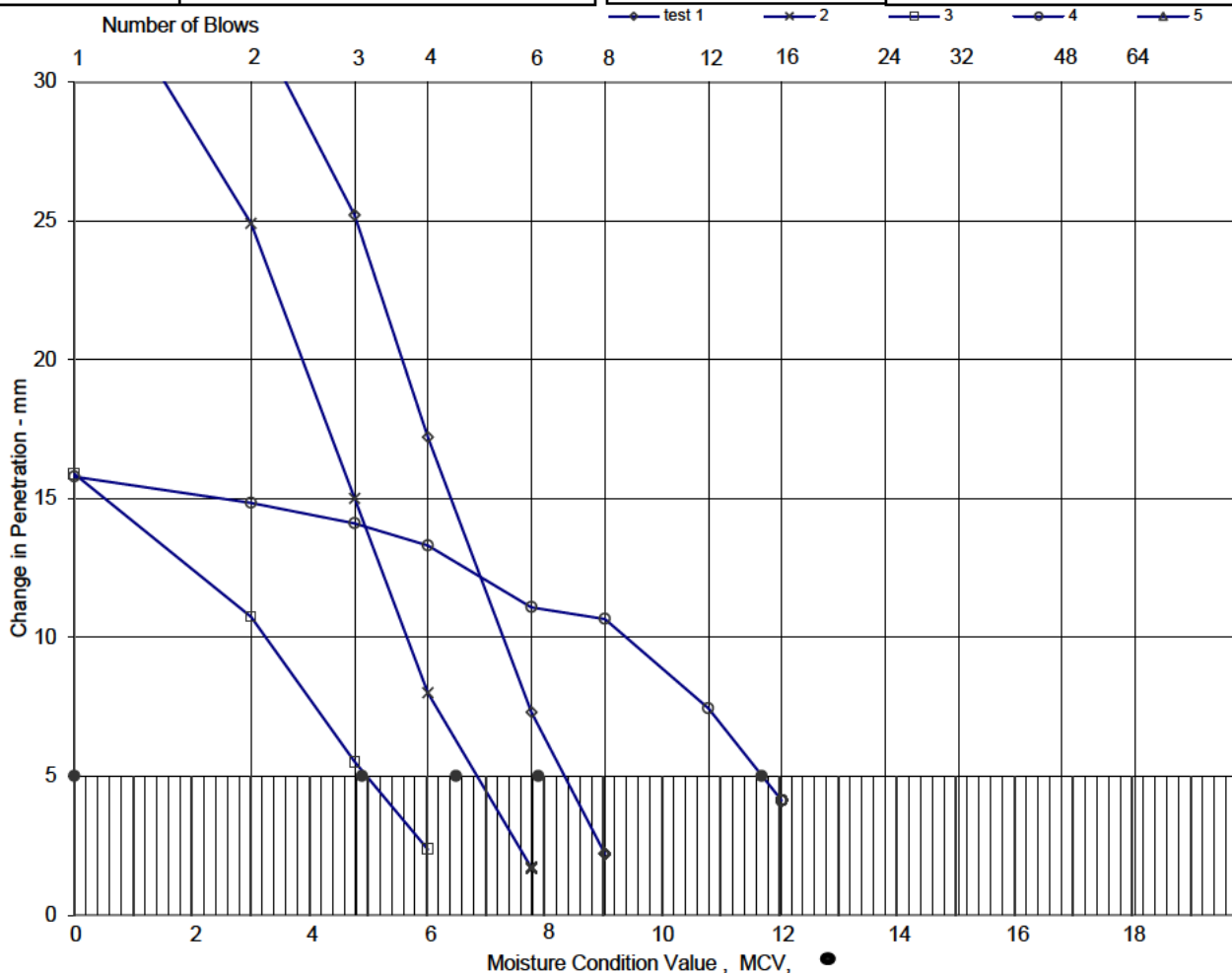
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MOISTURE CONDITION VALUE (MCV) / MOISTURE CONTENT

Sample Details:	SAMPLE ID:	Hole No	ATK-TP-01
	A9031-1920191114114717	Sample Depth (m BGL)	3.00 - 3.10
		Sample Type and No	B14
		Specimen Ref	



Test No	* ineffective / invalid point	1	2	3	4	*
Moisture Condition Value		7.9	6.5	4.9	11.7	
Moisture Content	%	31.0	33.0	36.0	30.0	
Bulk density after test	Mg/m ³	1.57	1.53	1.31	1.37	
Dry density after test	Mg/m ³	1.19	1.15	0.97	1.06	
Vane shear strength	kPa	52	38	30	56	

Soil description	Brown slightly sandy CLAY.
Procedure / Preparation	using single sample
Remarks	

Initial moisture content <20mm	%	31.4
Material retained on 20mm sieve	%	0

Method of determining MCV
Steepest straight line

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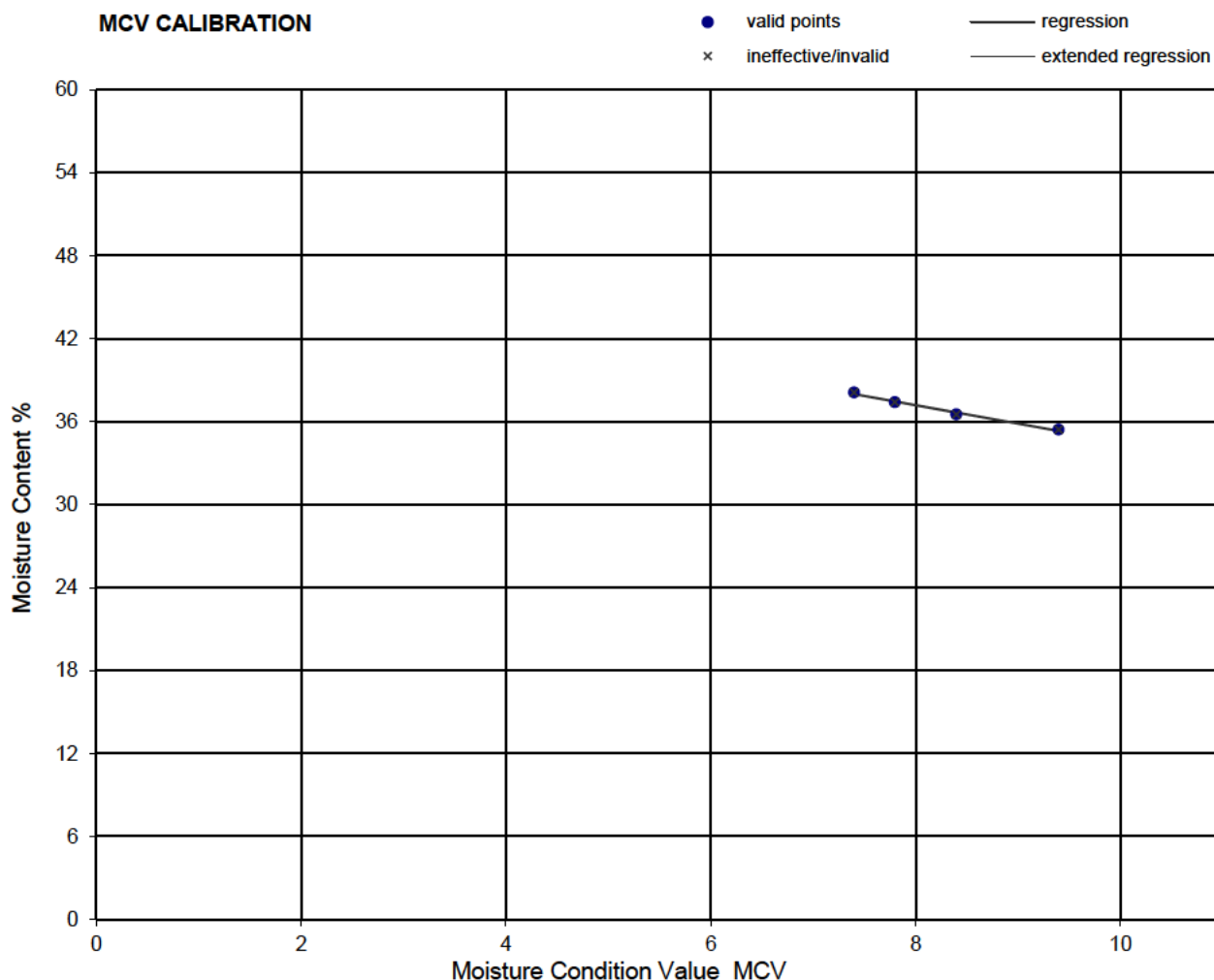
Figure
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MOISTURE CONDITION VALUE (MCV) / MOISTURE CONTENT

Sample Details:	SAMPLE ID:	Hole No	ATK-TP-02
	A9031-1920191113101600	Sample Depth (m BGL)	0.50 - 0.70
		Sample Type and No	B3
		Specimen Ref	



Characteristics of calibration line (determined using linear regression)	
Intercept	47.9
Slope	-1.33
Sensitivity (Change in MCV per 1% moisture content)	0.75
Correlation (proximity of test points to regression line)	-0.99
Method of interpretation of MCV	Steepest straight line

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QA Ref
SLR 4,5,5
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Project Name HAVANT THICKET WATER STORAGE

Figure
MCVREL

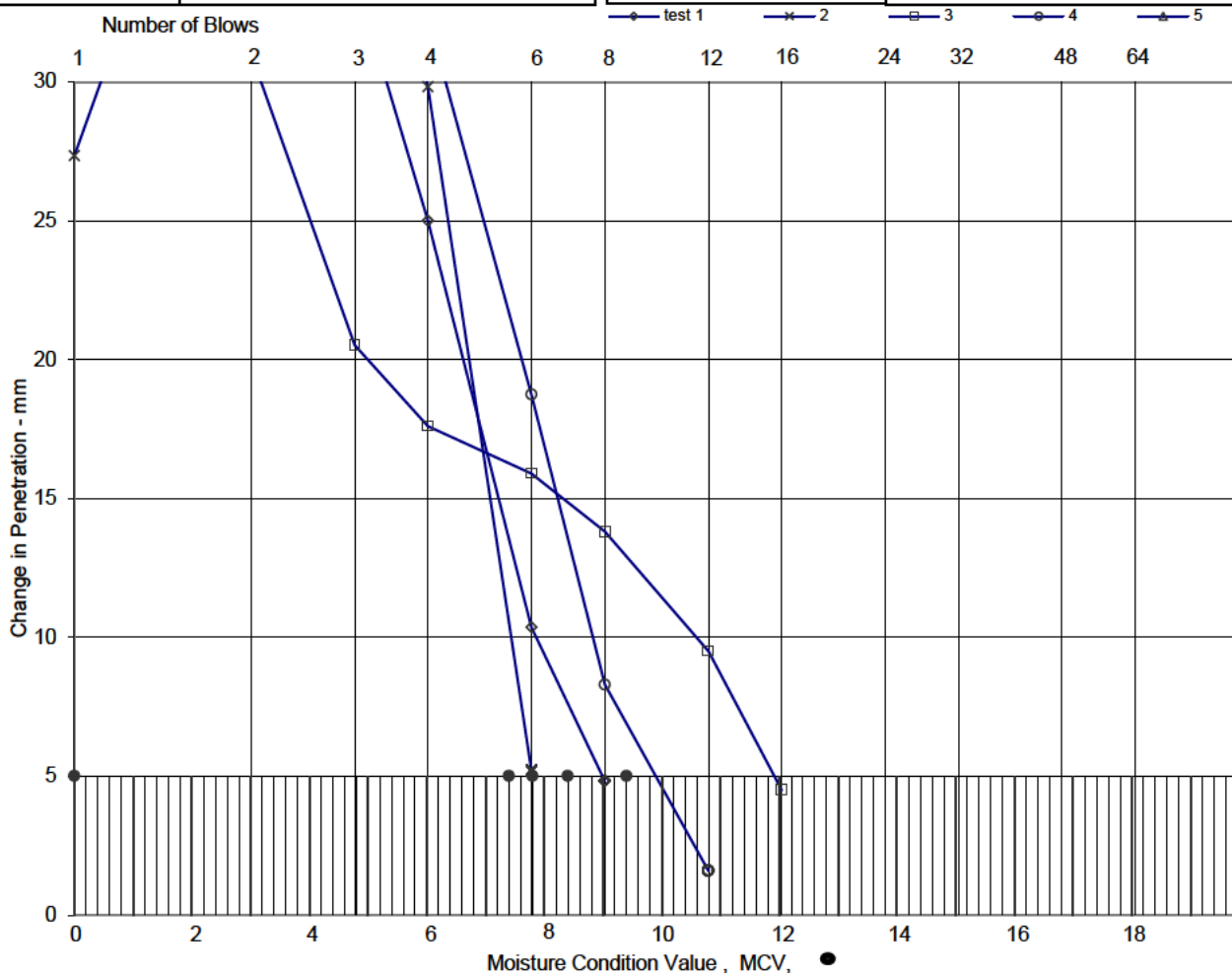
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MOISTURE CONDITION VALUE (MCV) / MOISTURE CONTENT

Sample Details:	SAMPLE ID:	Hole No	ATK-TP-02
	A9031-1920191113101600	Sample Depth (m BGL)	0.50 - 0.70
		Sample Type and No	B3
		Specimen Ref	



Test No	* ineffective / invalid point	1	2	3	4	*
Moisture Condition Value		8.4	7.8	7.4	9.4	
Moisture Content	%	37.0	37.0	38.0	35.0	
Bulk density after test	Mg/m ³	1.85	1.84	1.84	1.89	
Dry density after test	Mg/m ³	1.36	1.34	1.33	1.40	
Vane shear strength	kPa	54	56	64	42	

Soil description	Brown slightly sandy CLAY
Procedure / Preparation	using single sample
Remarks	

Initial moisture content <20mm	%	36.4
Material retained on 20mm sieve	%	0

Method of determining MCV
Steepest straight line

QA Ref
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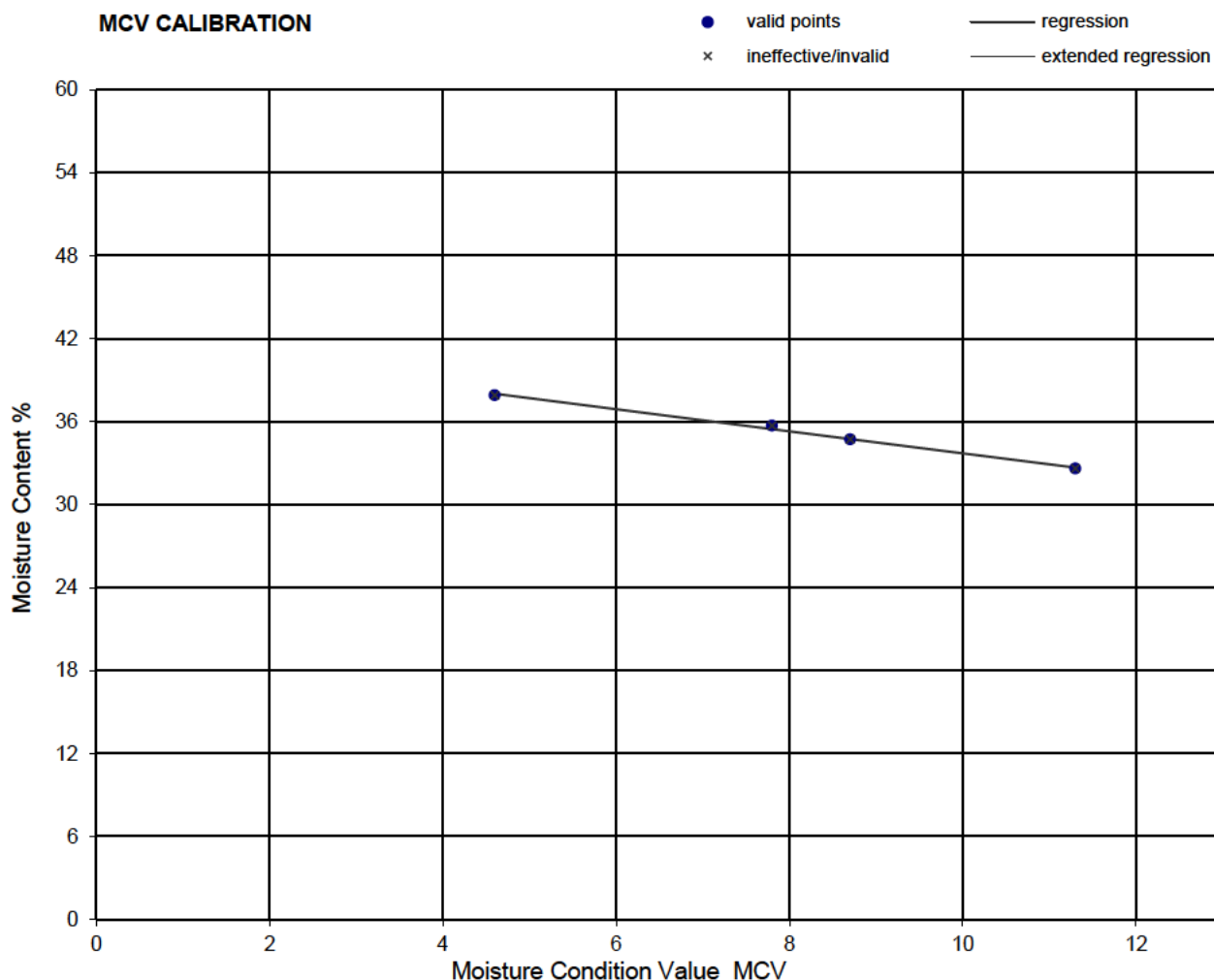
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MOISTURE CONDITION VALUE (MCV) / MOISTURE CONTENT

Sample Details:	SAMPLE ID:	Hole No	ATK-TP-02
	A9031-1920191113101617	Sample Depth (m BGL)	1.30 - 1.40
		Sample Type and No	B6
		Specimen Ref	



Characteristics of calibration line (determined using linear regression)	
Intercept	41.7
Slope	-0.79
Sensitivity (Change in MCV per 1% moisture content)	1.26
Correlation (proximity of test points to regression line)	-1.00
Method of interpretation of MCV	Steepest straight line

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Project Name HAVANT THICKET WATER STORAGE

Figure
MCVREL

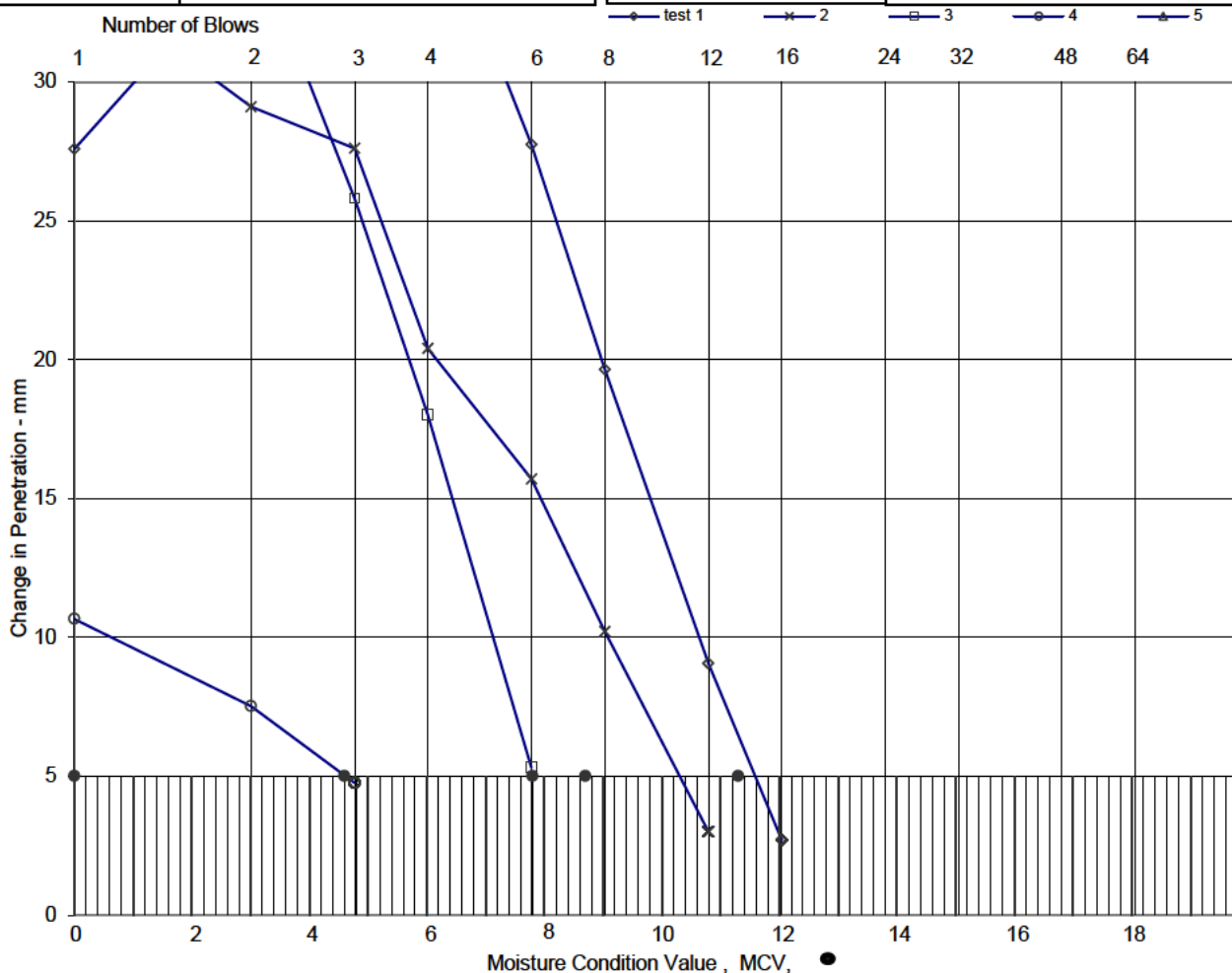
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MOISTURE CONDITION VALUE (MCV) / MOISTURE CONTENT

Sample Details:	SAMPLE ID:	Hole No	ATK-TP-02
	A9031-1920191113101617	Sample Depth (m BGL)	1.30 - 1.40
		Sample Type and No	B6
		Specimen Ref	



Test No	* ineffective / invalid point	1	2	3	4	*
Moisture Condition Value		11.3	8.7	7.8	4.6	
Moisture Content	%	33.0	35.0	36.0	38.0	
Bulk density after test	Mg/m ³	1.85	1.83	1.76	1.36	
Dry density after test	Mg/m ³	1.40	1.36	1.30	0.99	

Soil description	Brown slightly sandy slightly gravelly CLAY.
Procedure / Preparation	using single sample
Remarks	

Initial moisture content <20mm	%	32.5
Material retained on 20mm sieve	%	0

Method of determining MCV
Steepest straight line

QA Ref
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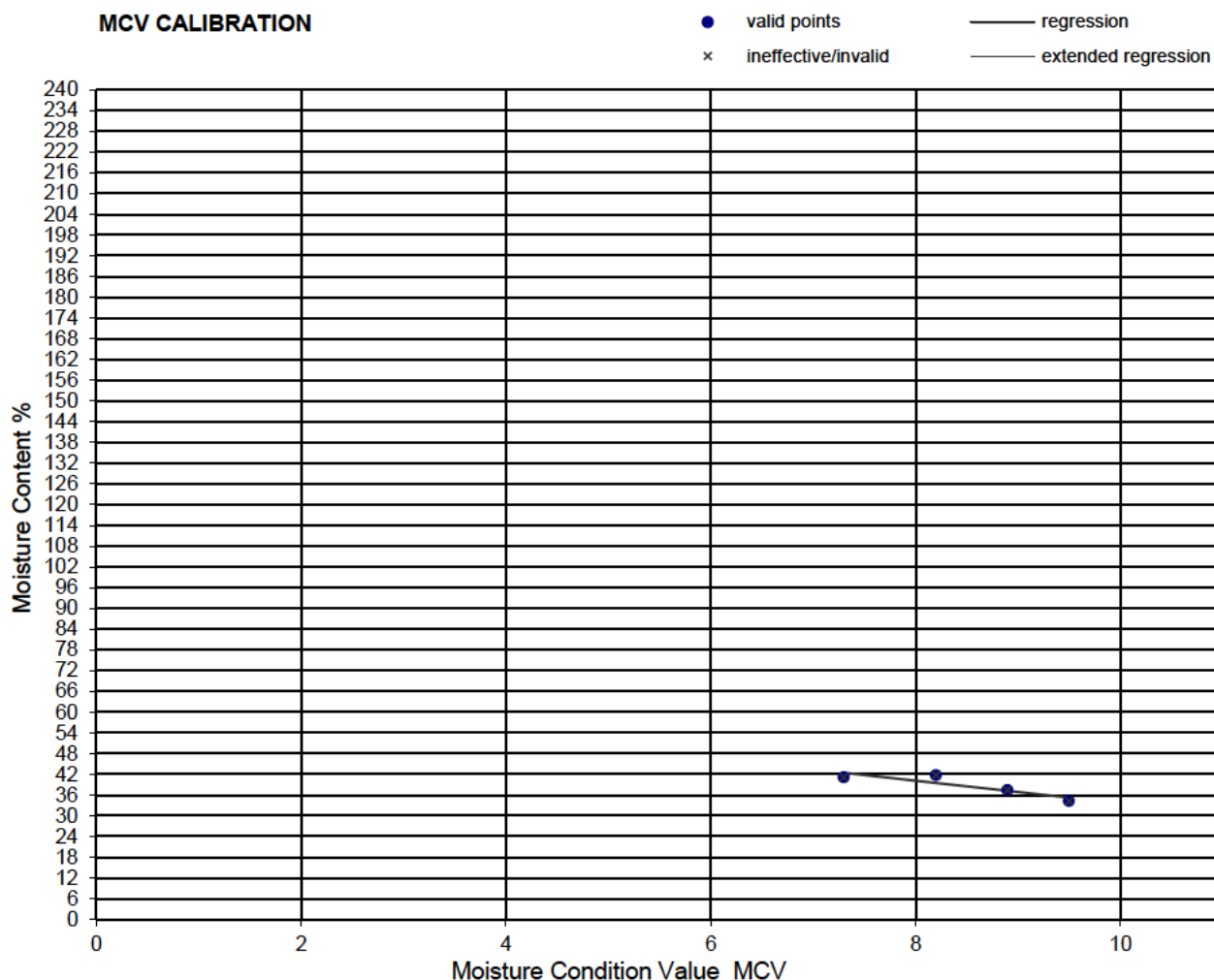
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MOISTURE CONDITION VALUE (MCV) / MOISTURE CONTENT

Sample Details:	SAMPLE ID:	Hole No	ATK-TP-03
	A9031-1920191115080841	Sample Depth (m BGL)	0.90 - 1.00
		Sample Type and No	B6
		Specimen Ref	



Characteristics of calibration line (determined using linear regression)	
Intercept	66.4
Slope	-3.28
Sensitivity (Change in MCV per 1% moisture content)	0.31
Correlation (proximity of test points to regression line)	-0.89
Method of interpretation of MCV	Steepest straight line

The above characteristics are NOT covered by UKAS accreditation to BS1377

QA Ref
SLR 4.5.5
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Figure
MCVREL

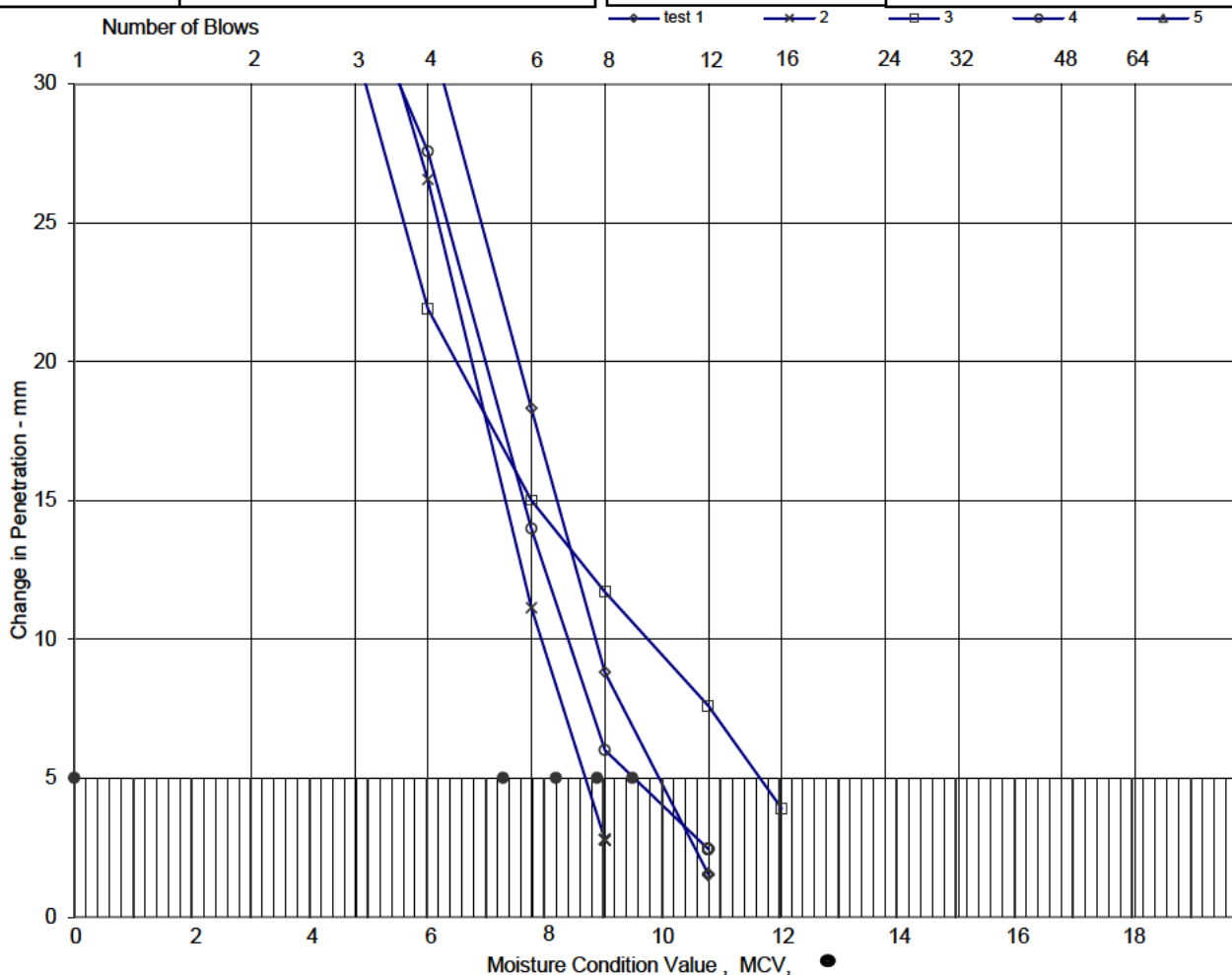
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MOISTURE CONDITION VALUE (MCV) / MOISTURE CONTENT

Sample Details:	SAMPLE ID:	Hole No	ATK-TP-03
	A9031-1920191115080841	Sample Depth (m BGL)	0.90 - 1.00
		Sample Type and No	B6
		Specimen Ref	



Test No	* ineffective / invalid point	1	2	3	4	*
Moisture Condition Value		9.5	7.3	8.2	8.9	
Moisture Content	%	34.0	41.0	42.0	37.0	
Bulk density after test	Mg/m ³	1.73	1.79	1.57	1.83	
Dry density after test	Mg/m ³	1.29	1.27	1.11	1.33	
Vane shear strength	kPa	32	26	20	34	

Soil description	Brown slightly sandy CLAY.
Procedure / Preparation	using single sample
Remarks	

Initial moisture content <20mm	%	34.2
Material retained on 20mm sieve	%	0

Method of determining MCV
Steepest straight line

QA Ref
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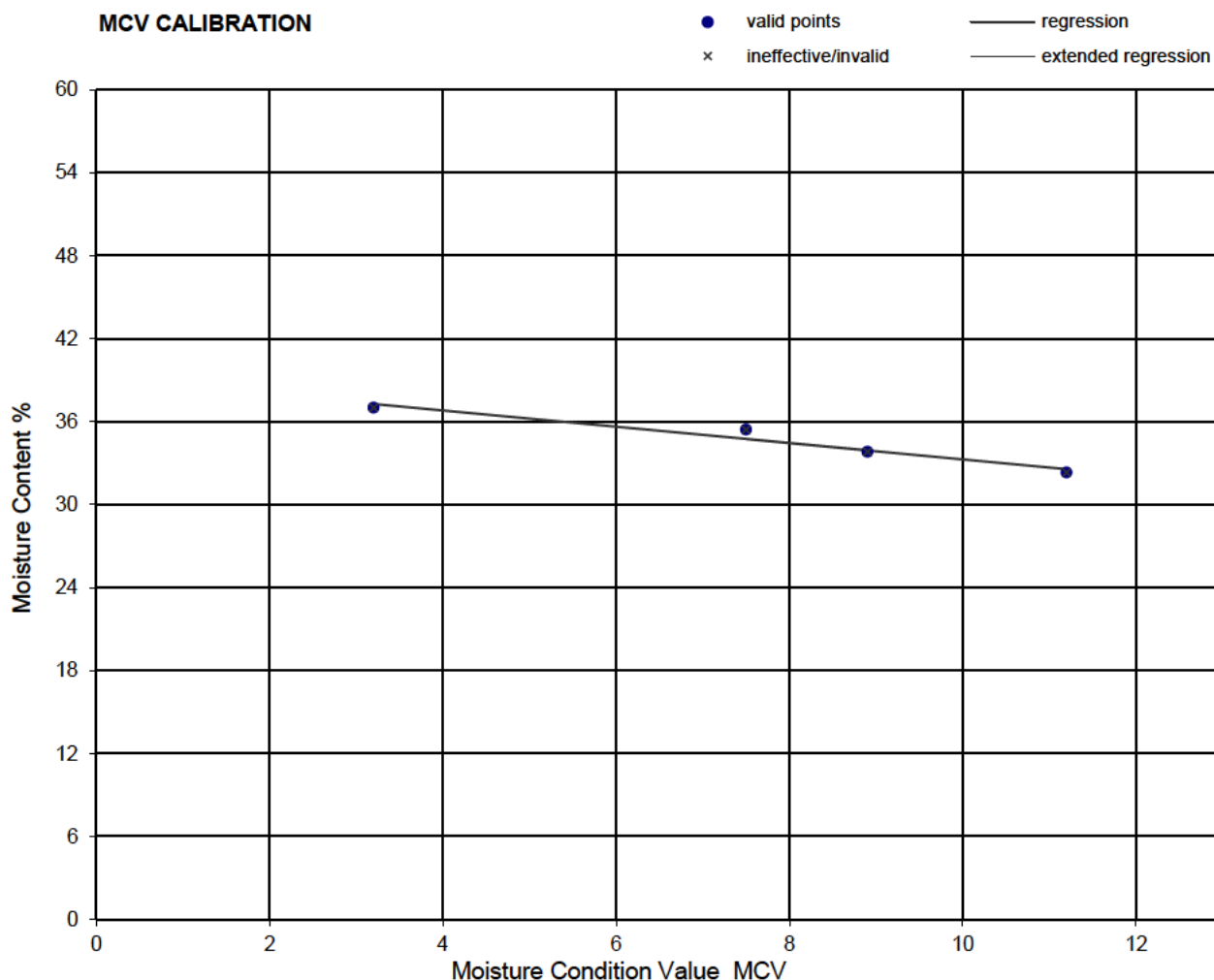
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MOISTURE CONDITION VALUE (MCV) / MOISTURE CONTENT

Sample Details:	SAMPLE ID:	Hole No	ATK-TP-03
	A9031-1920191115080900	Sample Depth (m BGL)	2.20 - 2.40
		Sample Type and No	B11
		Specimen Ref	



Characteristics of calibration line (determined using linear regression)	
Intercept	39.2
Slope	-0.59
Sensitivity (Change in MCV per 1% moisture content)	1.70
Correlation (proximity of test points to regression line)	-0.98
Method of interpretation of MCV	Steepest straight line

The above characteristics are NOT covered by UKAS accreditation to BS1377

QA Ref
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Figure
MCVREL

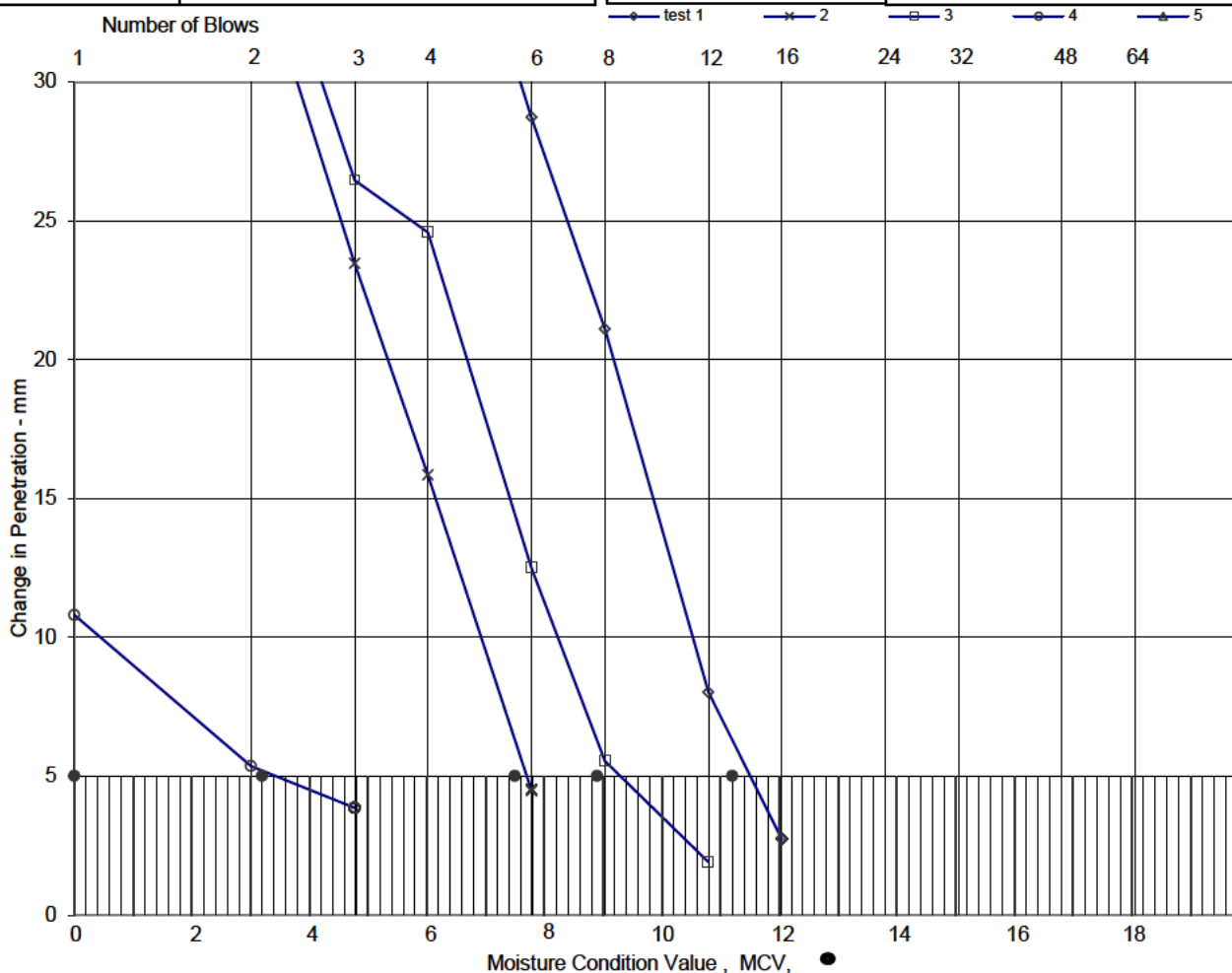
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MOISTURE CONDITION VALUE (MCV) / MOISTURE CONTENT

Sample Details:	SAMPLE ID:	Hole No	ATK-TP-03
	A9031-1920191115080900	Sample Depth (m BGL)	2.20 - 2.40
		Sample Type and No	B11
		Specimen Ref	



Test No	* ineffective / invalid point	1	2	3	4	*
Moisture Condition Value		11.2	7.5	8.9	3.2	
Moisture Content	%	32.0	35.0	34.0	37.0	
Bulk density after test	Mg/m ³	1.88	1.83	1.85	1.86	
Dry density after test	Mg/m ³	1.42	1.35	1.38	1.36	
Vane shear strength	kPa	52	34	38	30	

Soil description	Brown slightly sandy CLAY.
Procedure / Preparation	using single sample
Remarks	

Initial moisture content <20mm	%	32.2
Material retained on 20mm sieve	%	0

Method of determining MCV
Steepest straight line

QA Ref
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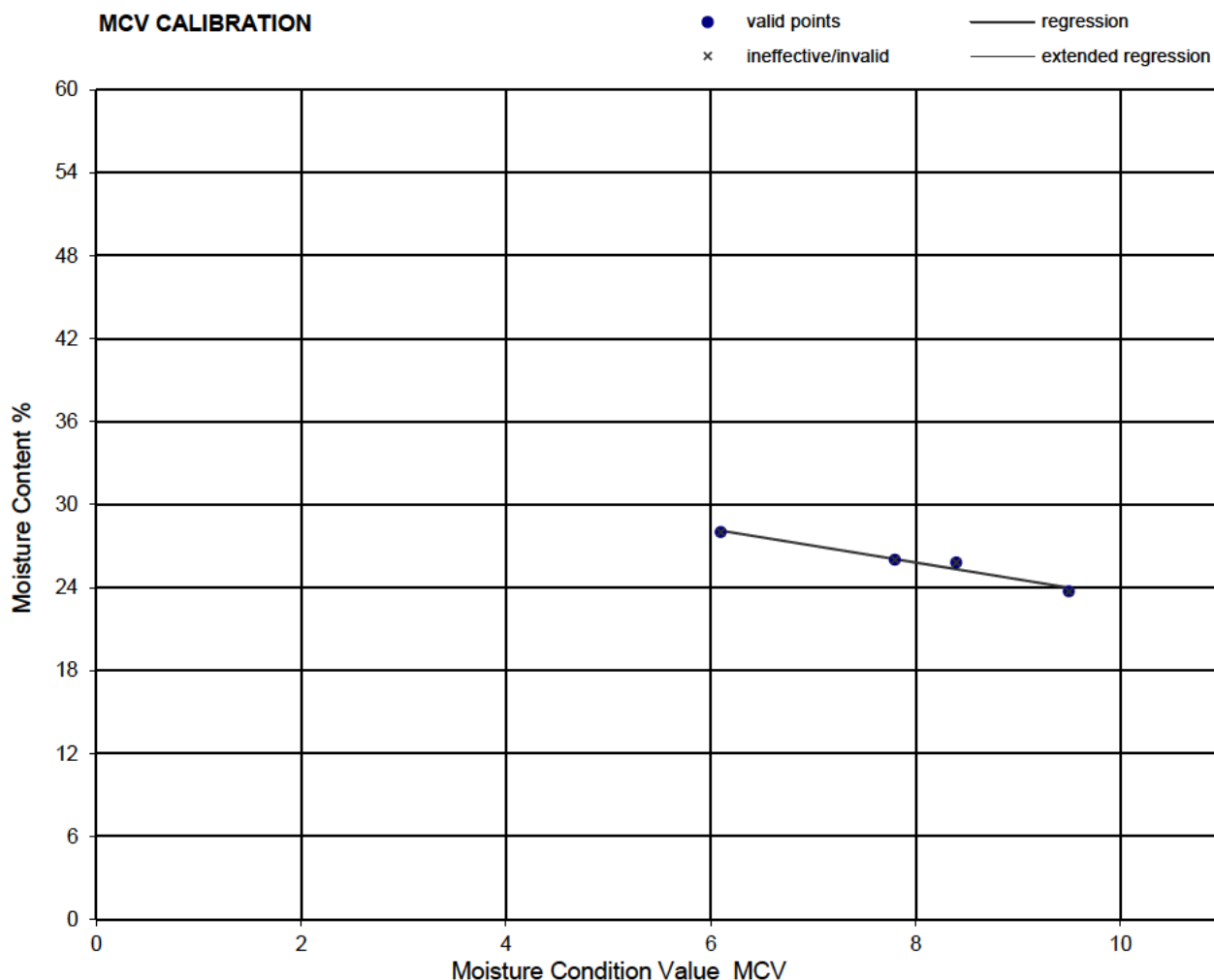
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MOISTURE CONDITION VALUE (MCV) / MOISTURE CONTENT

Sample Details:	SAMPLE ID:	Hole No	ATK-TP-03
	A9031-1920191115080910	Sample Depth (m BGL)	3.10 - 3.20
		Sample Type and No	B13
		Specimen Ref	



Characteristics of calibration line (determined using linear regression)	
Intercept	35.5
Slope	-1.22
Sensitivity (Change in MCV per 1% moisture content)	0.82
Correlation (proximity of test points to regression line)	-0.98
Method of interpretation of MCV	Steepest straight line

The above characteristics are NOT covered by UKAS accreditation to BS1377

QA Ref
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Figure
MCVREL

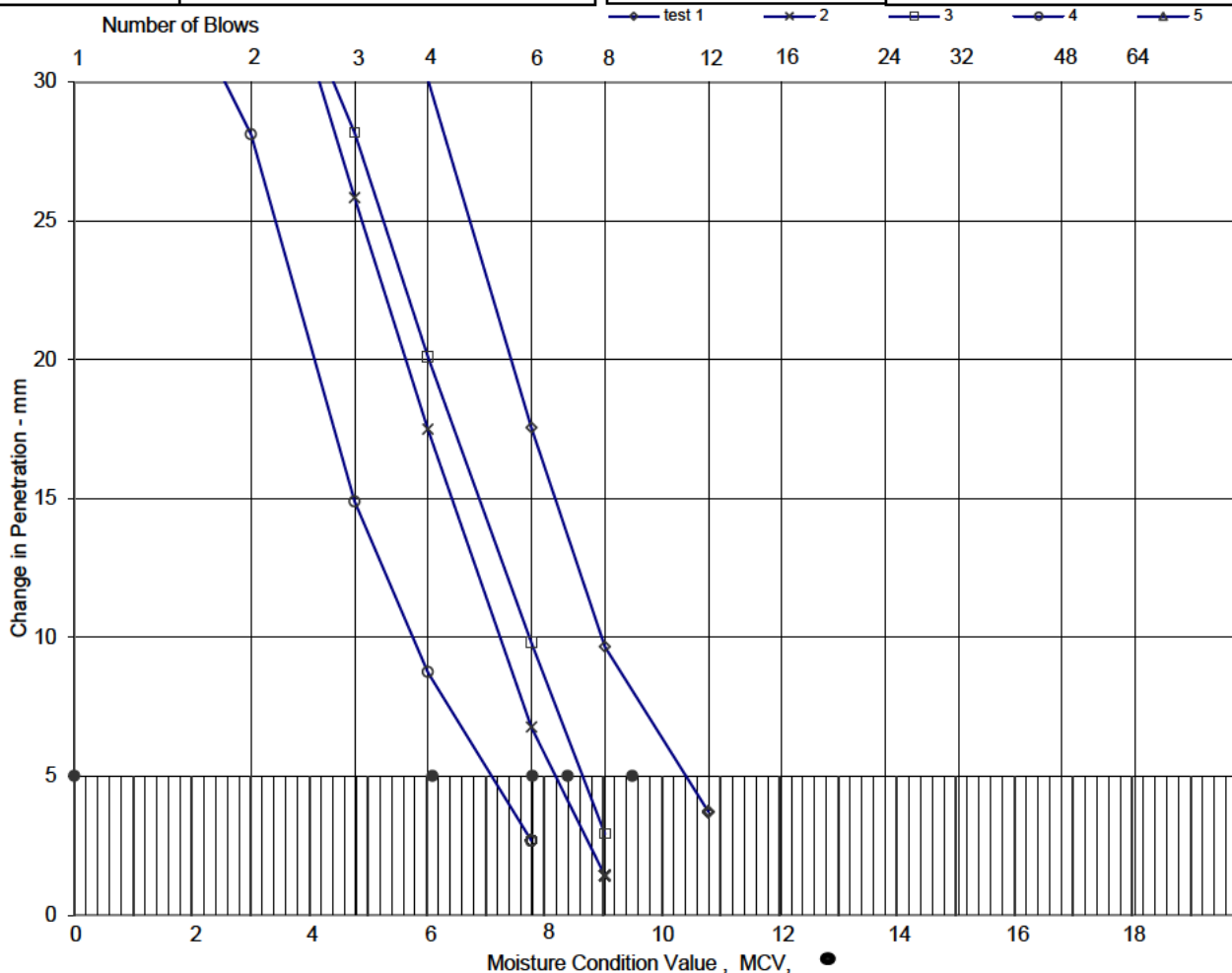
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MOISTURE CONDITION VALUE (MCV) / MOISTURE CONTENT

Sample Details:	SAMPLE ID:	Hole No	ATK-TP-03
	A9031-1920191115080910	Sample Depth (m BGL)	3.10 - 3.20
		Sample Type and No	B13
		Specimen Ref	



Test No	* ineffective / invalid point	1	2	3	4	*
Moisture Condition Value		9.5	7.8	8.4	6.1	
Moisture Content	%	24.0	26.0	26.0	28.0	
Bulk density after test	Mg/m ³	1.99	1.95	1.98	1.93	
Dry density after test	Mg/m ³	1.61	1.55	1.57	1.51	
Vane shear strength	kPa	16	20	40	66	

Soil description	Dark grey slightly sandy CLAY.
Procedure / Preparation	using single sample
Remarks	

Initial moisture content <20mm	%	28.1
Material retained on 20mm sieve	%	0

Method of determining MCV
Steepest straight line

QA Ref
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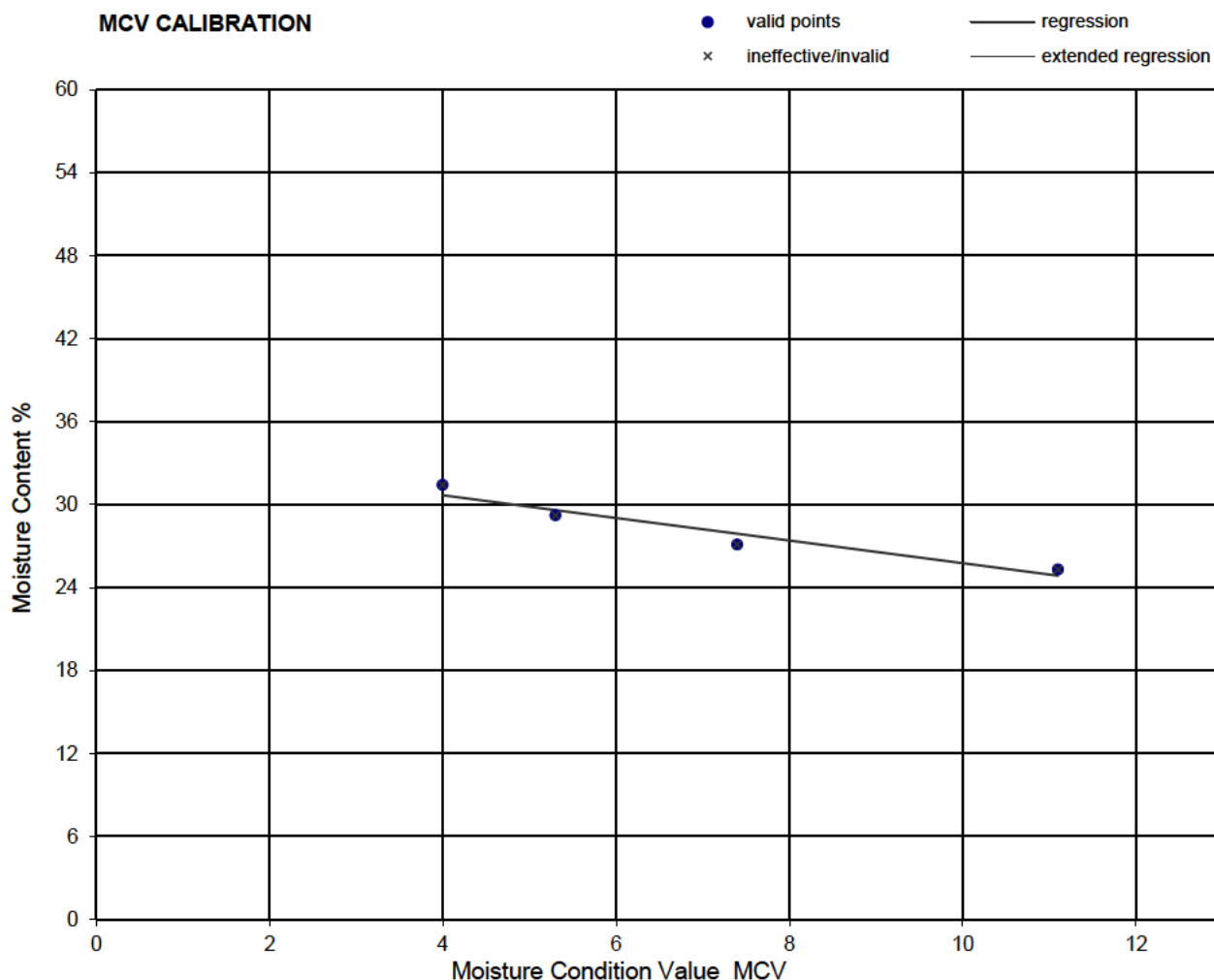
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MOISTURE CONDITION VALUE (MCV) / MOISTURE CONTENT

Sample Details:	SAMPLE ID:	Hole No	ATK-TP-04
	A9031-1920191127041518	Sample Depth (m BGL)	3.00 - 3.10
		Sample Type and No	B12
		Specimen Ref	



Characteristics of calibration line (determined using linear regression)	
Intercept	33.9
Slope	-0.82
Sensitivity (Change in MCV per 1% moisture content)	1.22
Correlation (proximity of test points to regression line)	-0.96
Method of interpretation of MCV	Steepest straight line

The above characteristics are NOT covered by UKAS accreditation to BS1377

QA Ref
SLR 4,5,5
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Project Name HAVANT THICKET WATER STORAGE

Figure
MCVREL

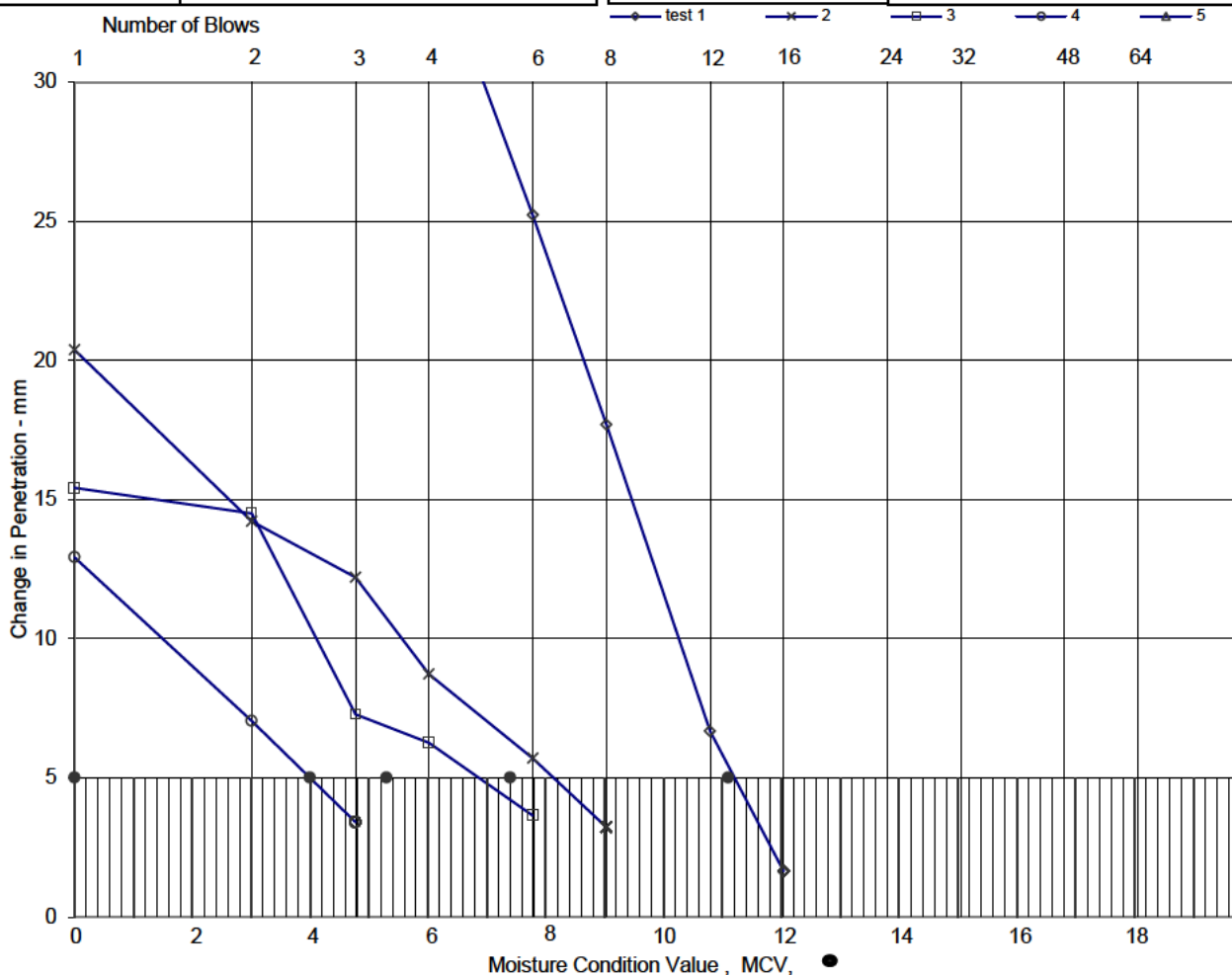
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MOISTURE CONDITION VALUE (MCV) / MOISTURE CONTENT

Sample Details:	SAMPLE ID:	Hole No	ATK-TP-04
	A9031-1920191127041518	Sample Depth (m BGL)	3.00 - 3.10
		Sample Type and No	B12
		Specimen Ref	



Test No	* ineffective / invalid point	1	2	3	4	*
Moisture Condition Value		11.1	7.4	5.3	4.0	
Moisture Content	%	25.0	27.0	29.0	31.0	
Bulk density after test	Mg/m ³	2.07	1.47	1.43	1.42	
Dry density after test	Mg/m ³	1.65	1.16	1.11	1.08	
Vane shear strength	kPa	60	52	46	40	

Soil description	Reddish brown mottled grey slightly sandy CLAY.
Procedure / Preparation	using single sample
Remarks	

Initial moisture content <20mm	%	25.3
Material retained on 20mm sieve	%	0

Method of determining MCV
Steepest straight line

QA Ref
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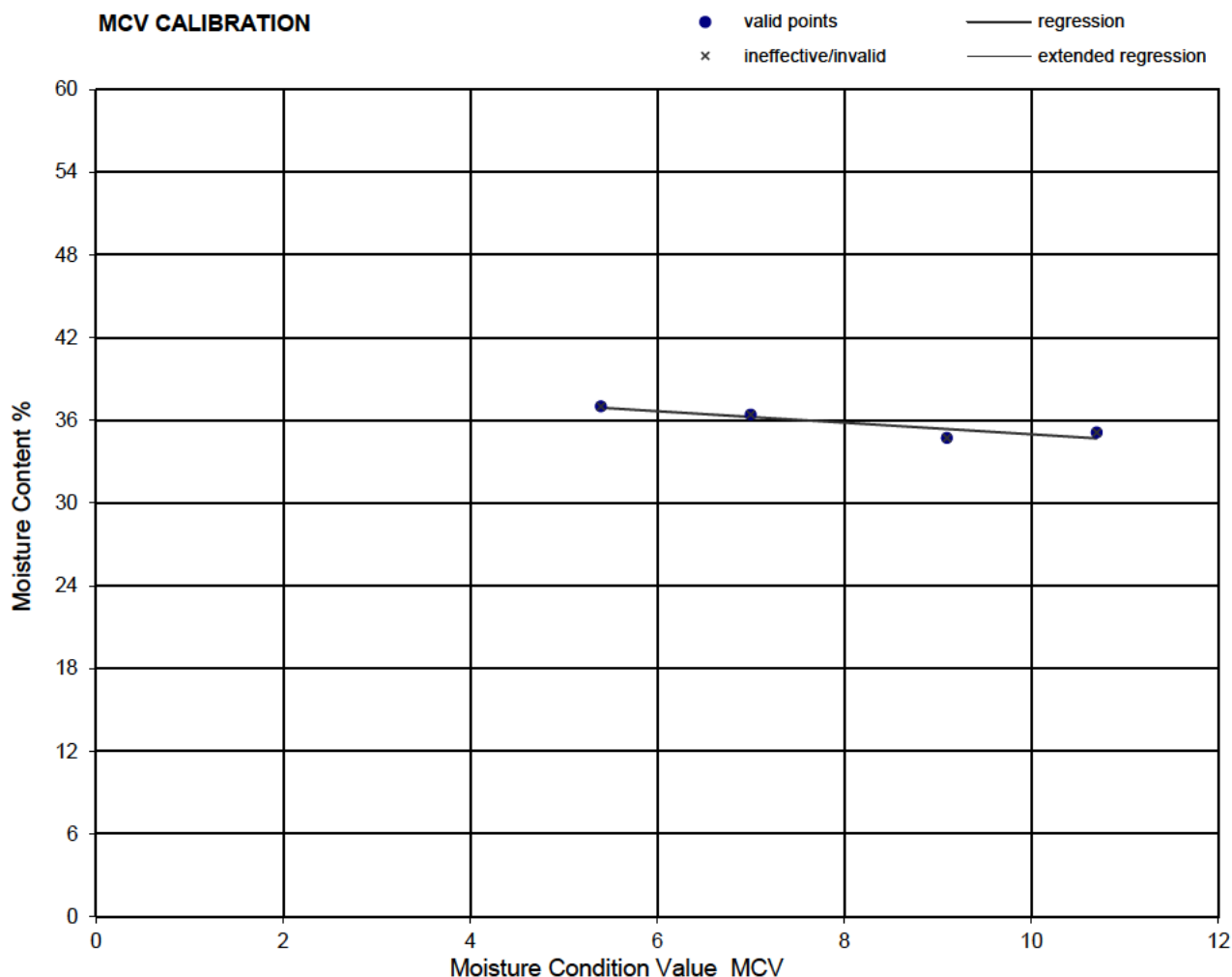
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MOISTURE CONDITION VALUE (MCV) / MOISTURE CONTENT

Sample Details:	SAMPLE ID:	Hole No	ATK-TP-06
	A9031-1920191211040049	Sample Depth (m BGL)	0.90 - 1.20
		Sample Type and No	B8
		Specimen Ref	



Characteristics of calibration line (determined using linear regression)	
Intercept	39.2
Slope	-0.42
Sensitivity (Change in MCV per 1% moisture content)	2.38
Correlation (proximity of test points to regression line)	-0.90
Method of interpretation of MCV	Steepest straight line

The above characteristics are NOT covered by UKAS accreditation to BS1377

QA Ref
SLR 4,5,5
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Figure
MCVREL

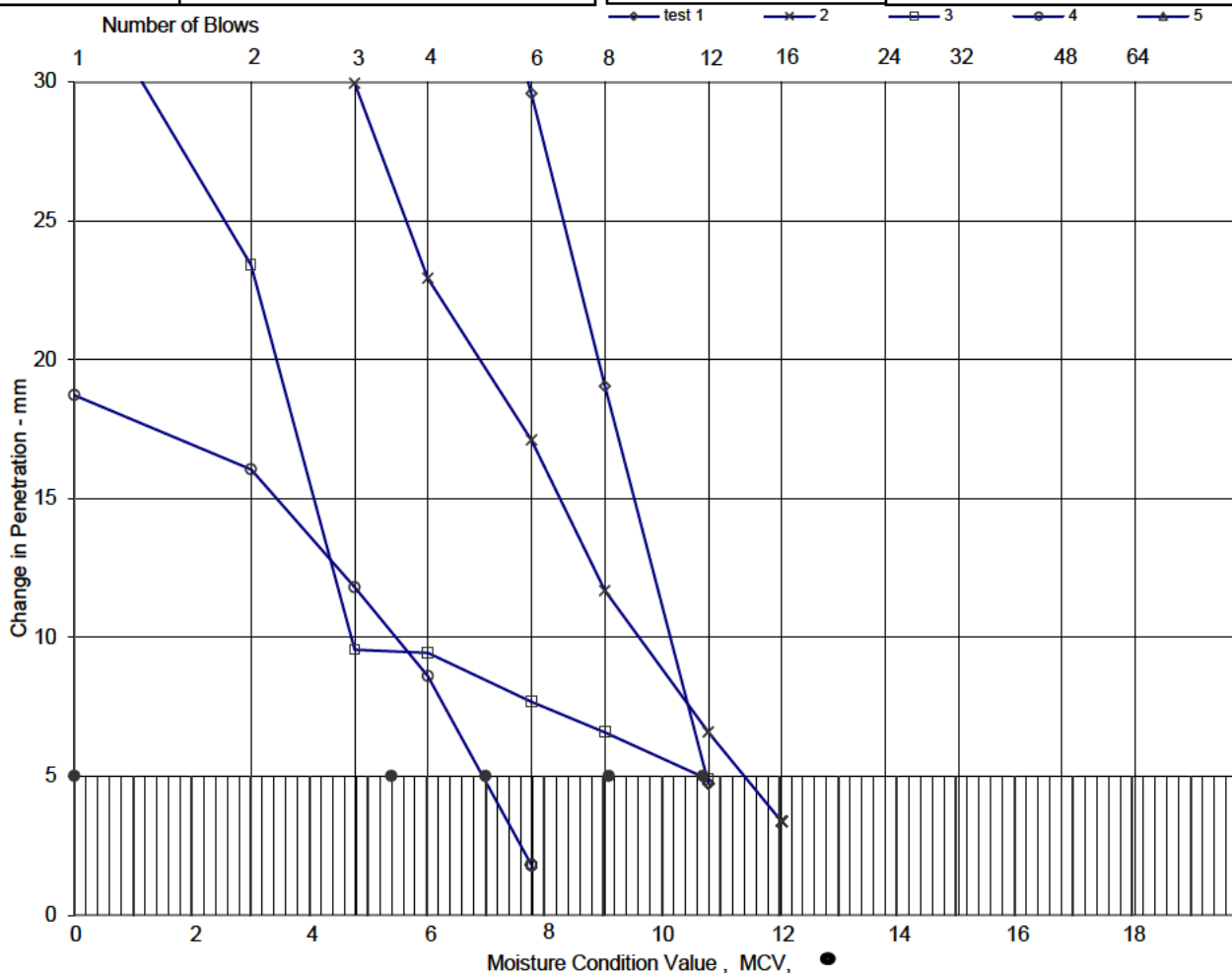
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MOISTURE CONDITION VALUE (MCV) / MOISTURE CONTENT

Sample Details:	SAMPLE ID:	Hole No	ATK-TP-06
	A9031-1920191211040049	Sample Depth (m BGL)	0.90 - 1.20
		Sample Type and No	B8
		Specimen Ref	



Test No	* ineffective / invalid point	1	2	3	4	*
Moisture Condition Value		10.7	9.1	5.4	7.0	
Moisture Content	%	35.0	35.0	37.0	36.0	
Bulk density after test	Mg/m ³	1.85	1.48	1.44	1.35	
Dry density after test	Mg/m ³	1.37	1.10	1.05	0.99	
Vane shear strength	kPa	48	42	56	64	

Soil description	Brown slightly sandy CLAY.
Procedure / Preparation	using single sample
Remarks	

Initial moisture content <20mm	%	35.1
Material retained on 20mm sieve	%	0

Method of determining MCV
Steepest straight line

QA Ref
SLR 4,5,5
Rev 2.8
Jun 19



Project No A9031-19
Project Name HAVANT THICKET WATER STORAGE

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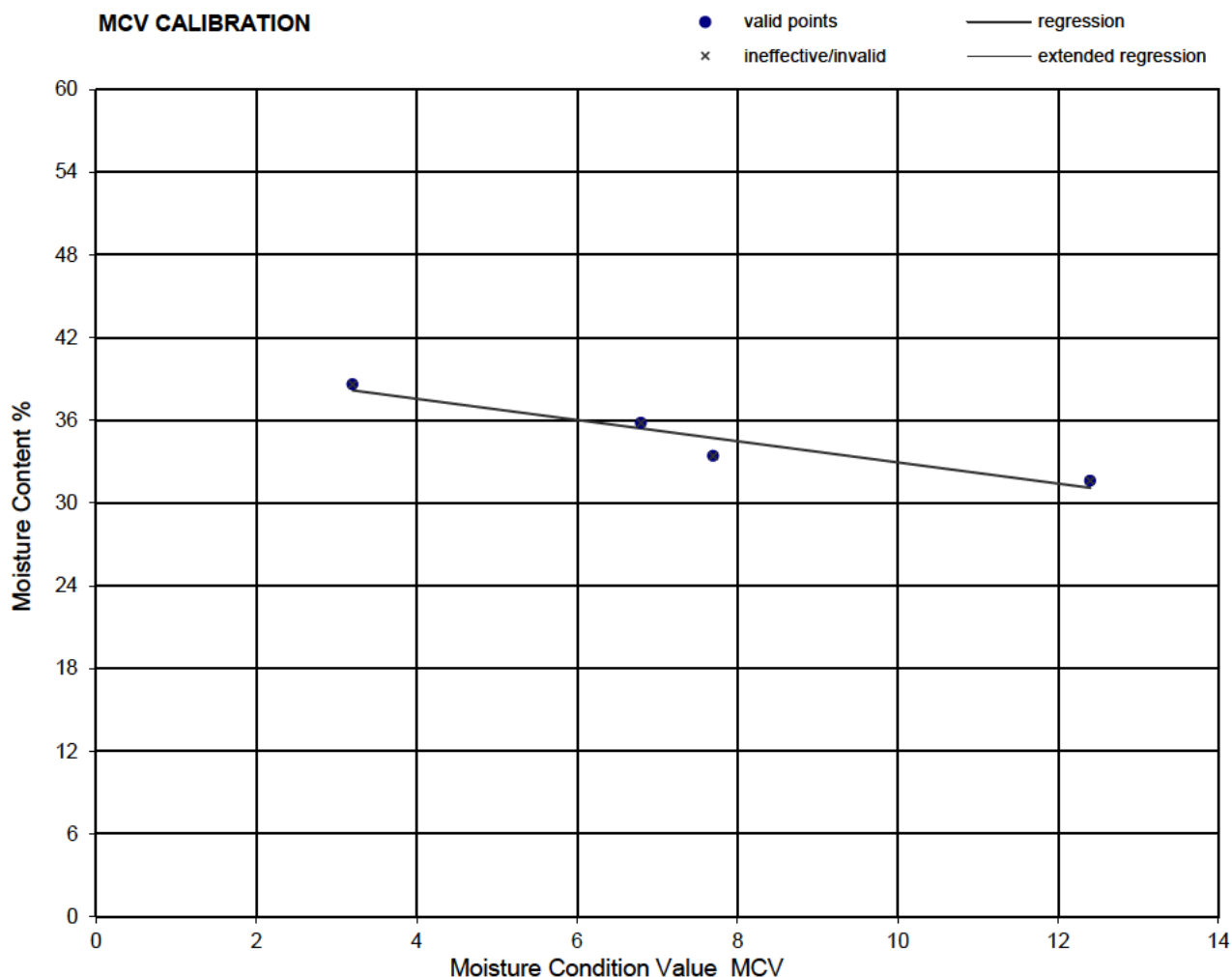
Figure
MCVREL

sheet 2 of 2

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MOISTURE CONDITION VALUE (MCV) / MOISTURE CONTENT

Sample Details:	SAMPLE ID:	Hole No	ATK-TP-06
	A9031-1920191211040141	Sample Depth (m BGL)	2.00 - 2.40
		Sample Type and No	B11
		Specimen Ref	



Characteristics of calibration line (determined using linear regression)	
Intercept	40.6
Slope	-0.77
Sensitivity (Change in MCV per 1% moisture content)	1.30
Correlation (proximity of test points to regression line)	-0.96
Method of interpretation of MCV	Steepest straight line

The above characteristics are NOT covered by UKAS accreditation to BS1377

QA Ref
SLR 4,5,5
Rev 2.8
Jun 19



Project No A9031-19
Project Name HAVANT THICKET WATER STORAGE

Figure
MCVREL

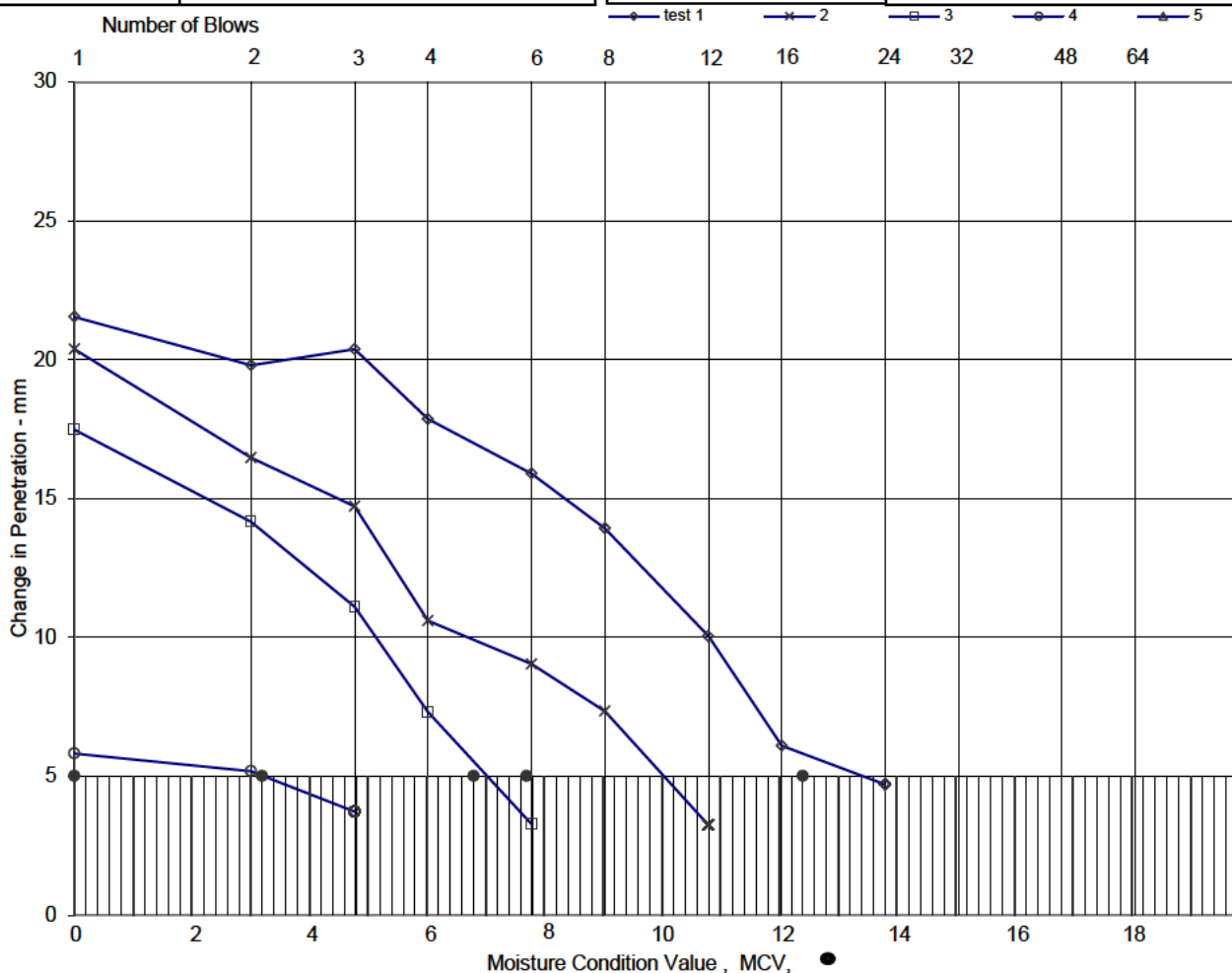
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MOISTURE CONDITION VALUE (MCV) / MOISTURE CONTENT

Sample Details:	SAMPLE ID:	Hole No	ATK-TP-06
	A9031-1920191211040141	Sample Depth (m BGL)	2.00 - 2.40
		Sample Type and No	B11
		Specimen Ref	



Test No	* ineffective / invalid point	1	2	3	4	*
Moisture Condition Value		12.4	7.7	6.8	3.2	
Moisture Content	%	32.0	33.0	36.0	39.0	
Bulk density after test	Mg/m ³	1.39	1.33	1.37	1.33	
Dry density after test	Mg/m ³	1.06	1.00	1.01	0.96	
Vane shear strength	kPa	32	28	24	20	

Soil description	Brown slightly sandy CLAY.
Procedure / Preparation	using single sample
Remarks	

Initial moisture content <20mm	%	31.6
Material retained on 20mm sieve	%	0

Method of determining MCV
Steepest straight line

QA Ref
SLR 4,5,5
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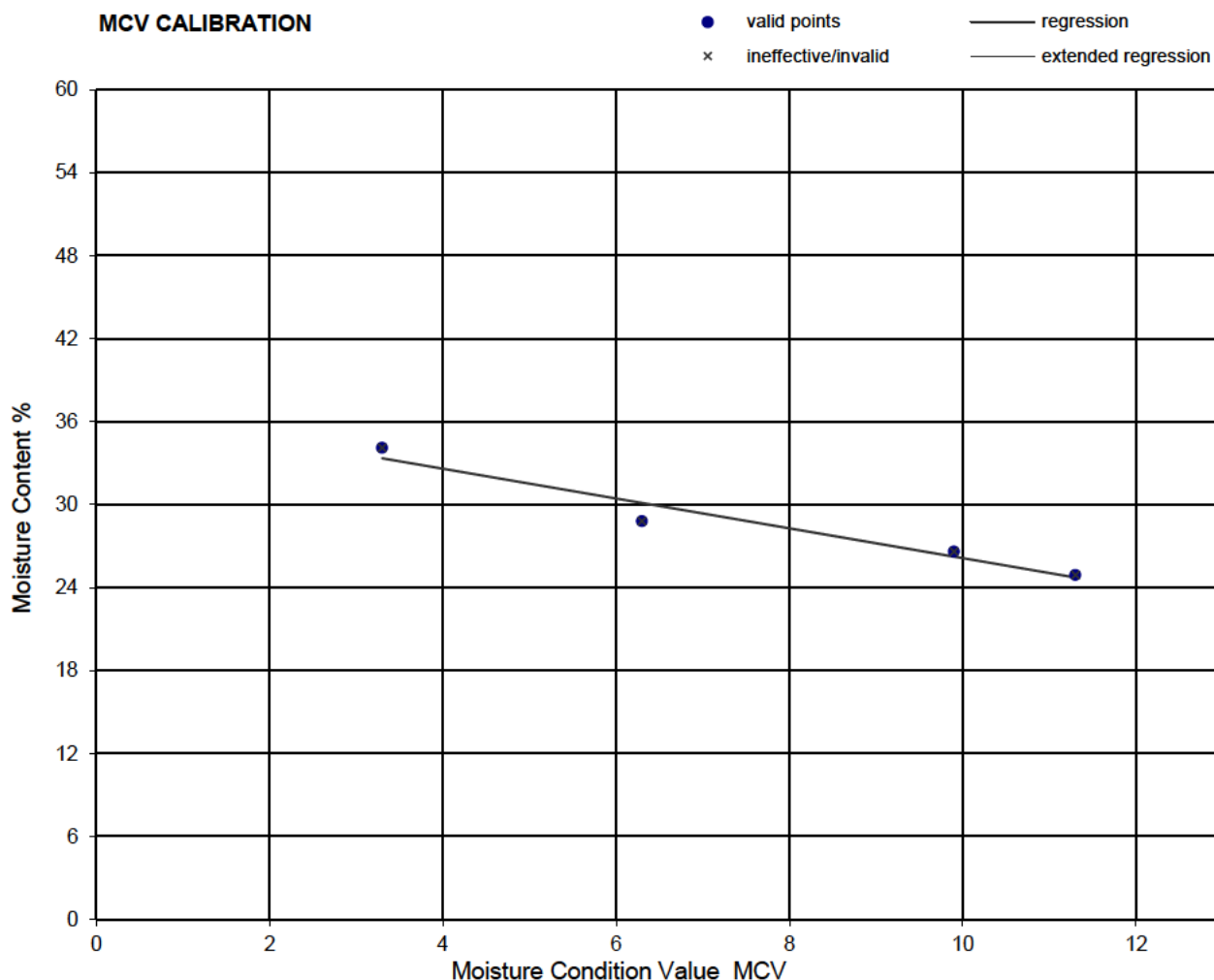
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MCVREL

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MOISTURE CONDITION VALUE (MCV) / MOISTURE CONTENT

Sample Details:	SAMPLE ID:	Hole No	ATK-TP-06
	A9031-1920191211040158	Sample Depth (m BGL)	3.00 - 3.50
		Sample Type and No	B13
		Specimen Ref	



Characteristics of calibration line (determined using linear regression)	
Intercept	36.9
Slope	-1.08
Sensitivity (Change in MCV per 1% moisture content)	0.93
Correlation (proximity of test points to regression line)	-0.97
Method of interpretation of MCV	Steepest straight line

The above characteristics are NOT covered by UKAS accreditation to BS1377

QA Ref
SLR 4,5,5
Rev 2.8
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Project Name HAVANT THICKET WATER STORAGE

Figure
MCVREL

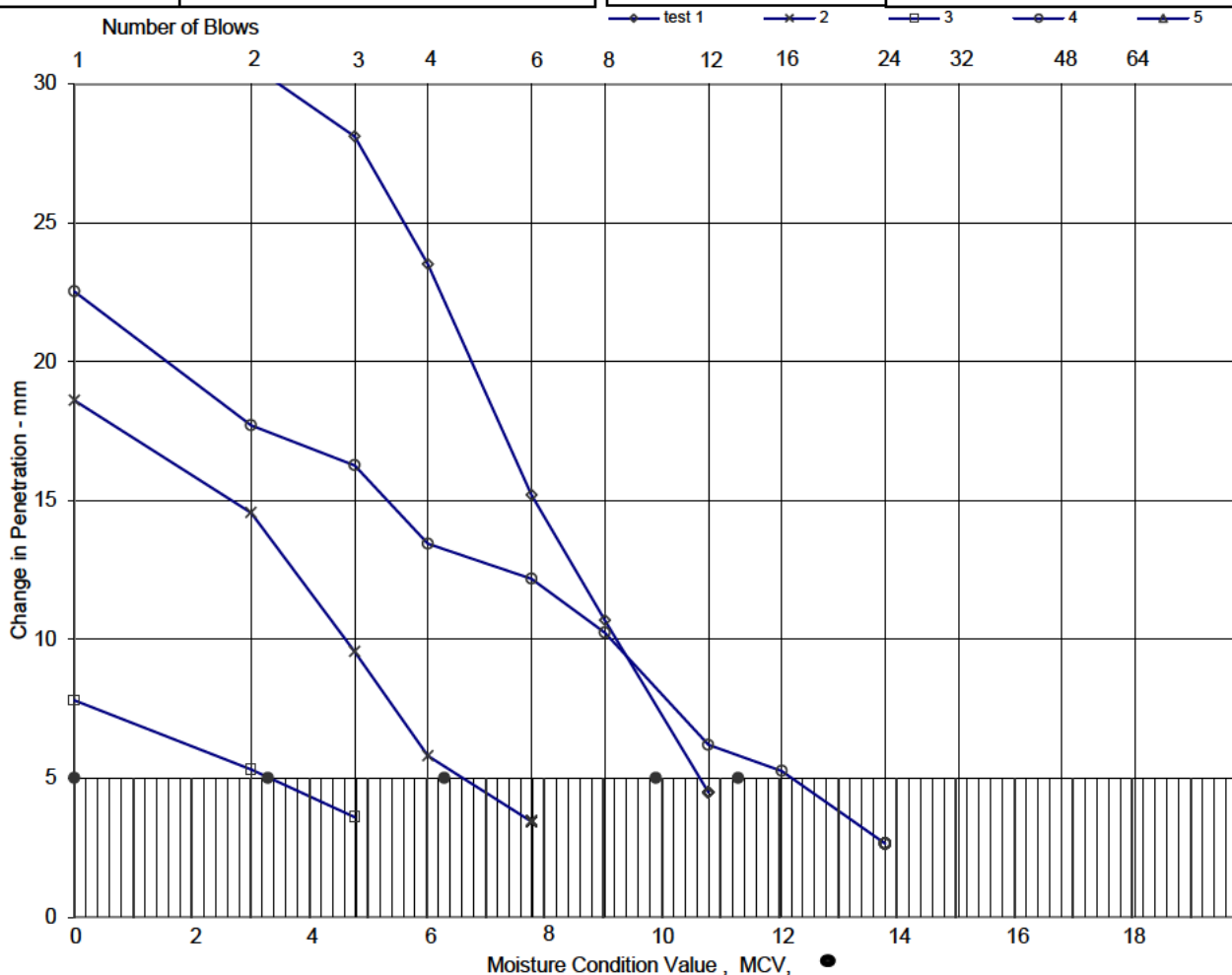
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MOISTURE CONDITION VALUE (MCV) / MOISTURE CONTENT

Sample Details:	SAMPLE ID:	Hole No	ATK-TP-06
	A9031-1920191211040158	Sample Depth (m BGL)	3.00 - 3.50
		Sample Type and No	B13
		Specimen Ref	



Test No	* ineffective / invalid point	1	2	3	4	*
Moisture Condition Value		9.9	6.3	3.3	11.3	
Moisture Content	%	27.0	29.0	34.0	25.0	
Bulk density after test	Mg/m³	1.68	1.34	1.32	1.39	
Dry density after test	Mg/m³	1.33	1.04	0.98	1.11	
Vane shear strength	kPa	78	70	64	58	

Soil description	Brown slightly sandy CLAY.
Procedure / Preparation	using single sample
Remarks	

Initial moisture content <20mm	%	26.6
Material retained on 20mm sieve	%	0

Method of determining MCV
Steepest straight line

QA Ref
SLR 4,5,5
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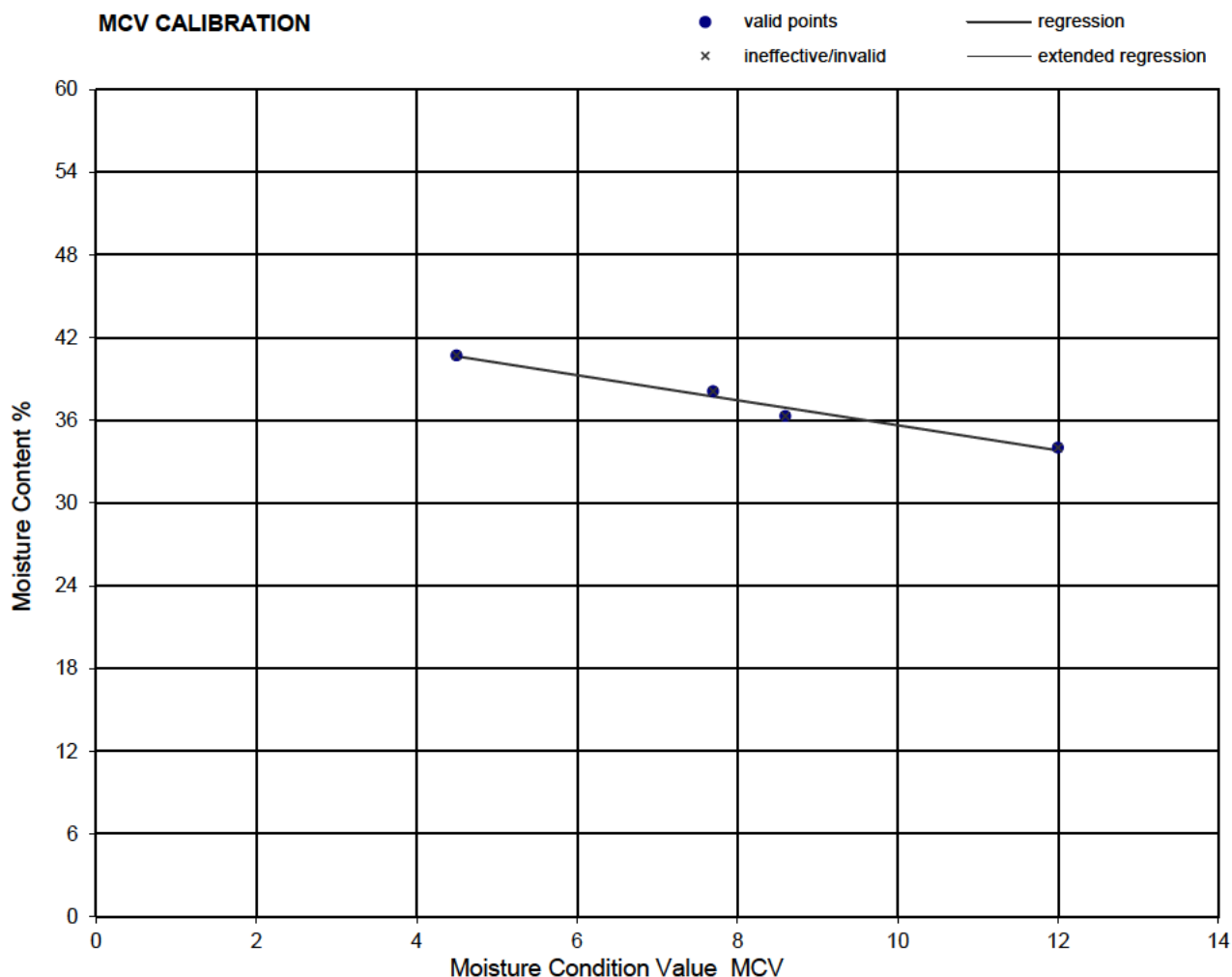
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MOISTURE CONDITION VALUE (MCV) / MOISTURE CONTENT

Sample Details:	SAMPLE ID:	Hole No	ATK-TPM-03
	A9031-1920191204111005	Sample Depth (m BGL)	3.60 - 3.70
		Sample Type and No	B12
		Specimen Ref	



Characteristics of calibration line (determined using linear regression)	
Intercept	44.7
Slope	-0.91
Sensitivity (Change in MCV per 1% moisture content)	1.10
Correlation (proximity of test points to regression line)	-0.99
Method of interpretation of MCV	Steepest straight line

The above characteristics are NOT covered by UKAS accreditation to BS1377

QA Ref
SLR 4,5,5
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Project Name HAVANT THICKET WATER STORAGE

Figure
MCVREL

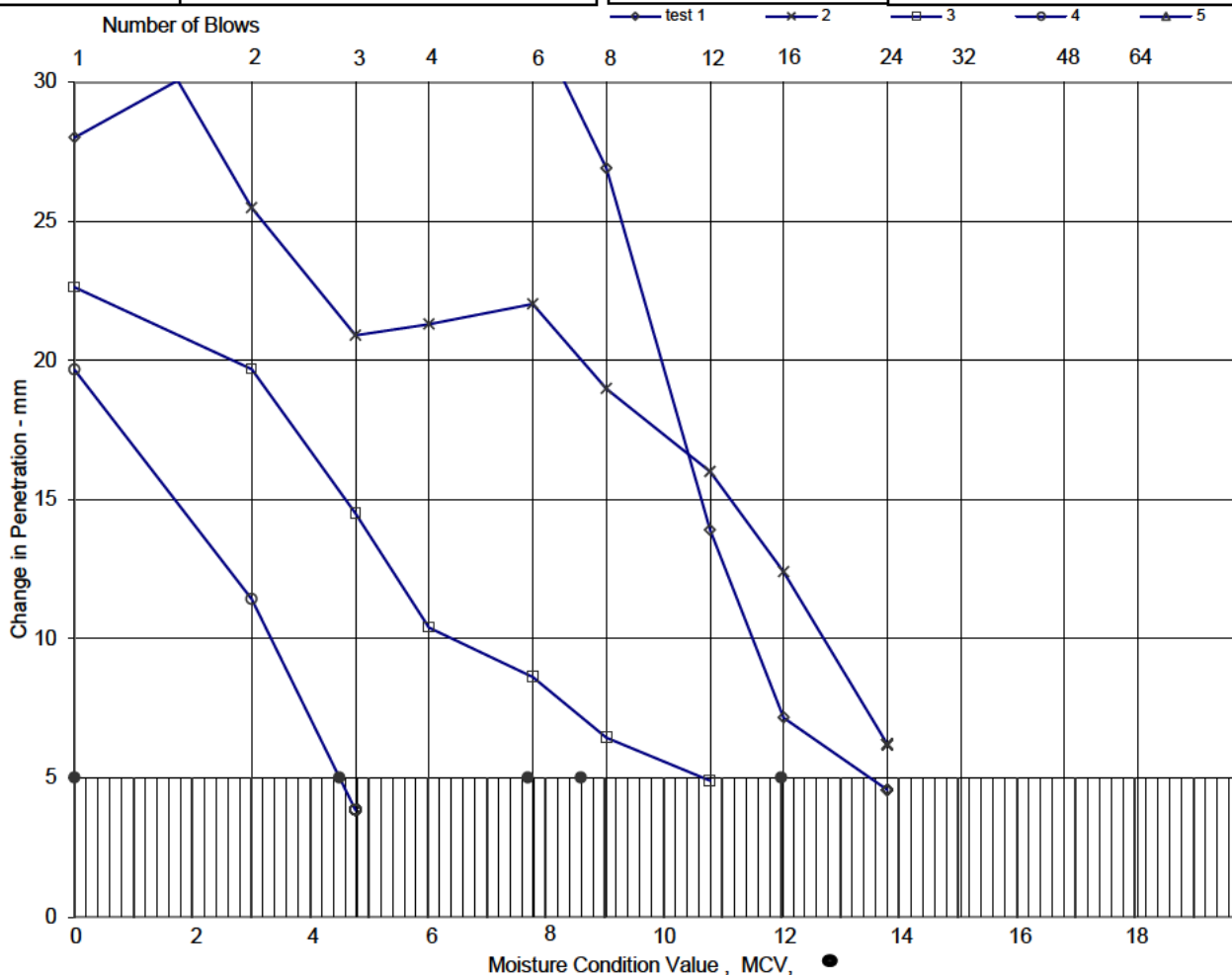
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MOISTURE CONDITION VALUE (MCV) / MOISTURE CONTENT

Sample Details:	SAMPLE ID:	Hole No	ATK-TPM-03
	A9031-1920191204111005	Sample Depth (m BGL)	3.60 - 3.70
		Sample Type and No	B12
		Specimen Ref	



Test No	* ineffective / invalid point	1	2	3	4	*
Moisture Condition Value		12.0	8.6	7.7	4.5	
Moisture Content	%	34.0	36.0	38.0	41.0	
Bulk density after test	Mg/m³	1.65	1.60	1.32	1.33	
Dry density after test	Mg/m³	1.23	1.17	0.96	0.95	
Vane shear strength	kPa	100	88	76	62	

Soil description	Brown slightly sandy CLAY.
Procedure / Preparation	using single sample
Remarks	

Initial moisture content <20mm	%	34
Material retained on 20mm sieve	%	0

Method of determining MCV
Steepest straight line

QA Ref
SLR 4,5,5
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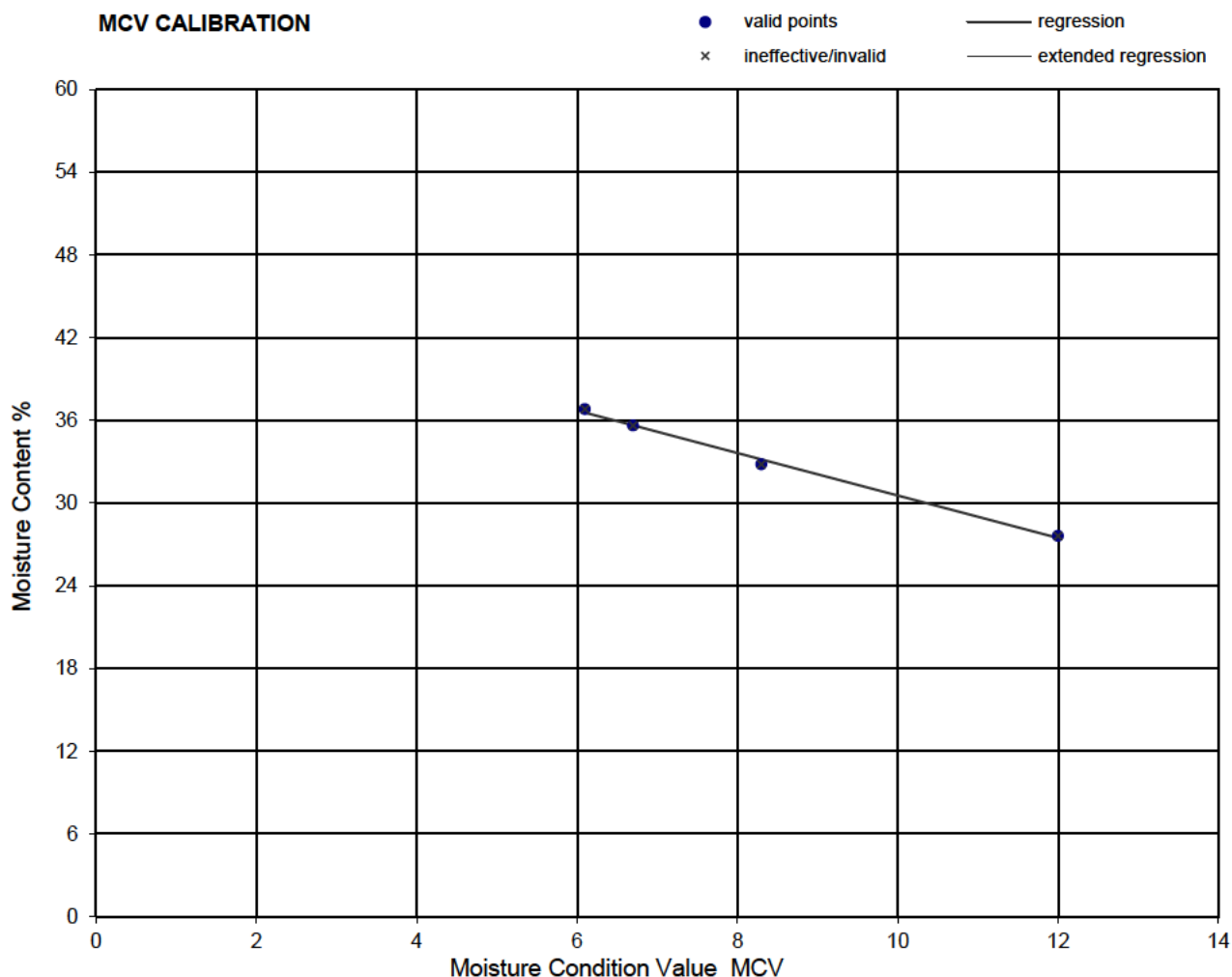
Figure
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MOISTURE CONDITION VALUE (MCV) / MOISTURE CONTENT

Sample Details:	SAMPLE ID:	Hole No	ATK-TPM-04
	A9031-1920191204125101	Sample Depth (m BGL)	1.50 - 1.60
		Sample Type and No	B7
		Specimen Ref	



Characteristics of calibration line (determined using linear regression)	
Intercept	45.9
Slope	-1.54
Sensitivity (Change in MCV per 1% moisture content)	0.65
Correlation (proximity of test points to regression line)	-1.00
Method of interpretation of MCV	Steepest straight line

The above characteristics are NOT covered by UKAS accreditation to BS1377

QA Ref
SLR 4,5,5
Rev 2.8
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Project Name HAVANT THICKET WATER STORAGE

Figure
MCVREL

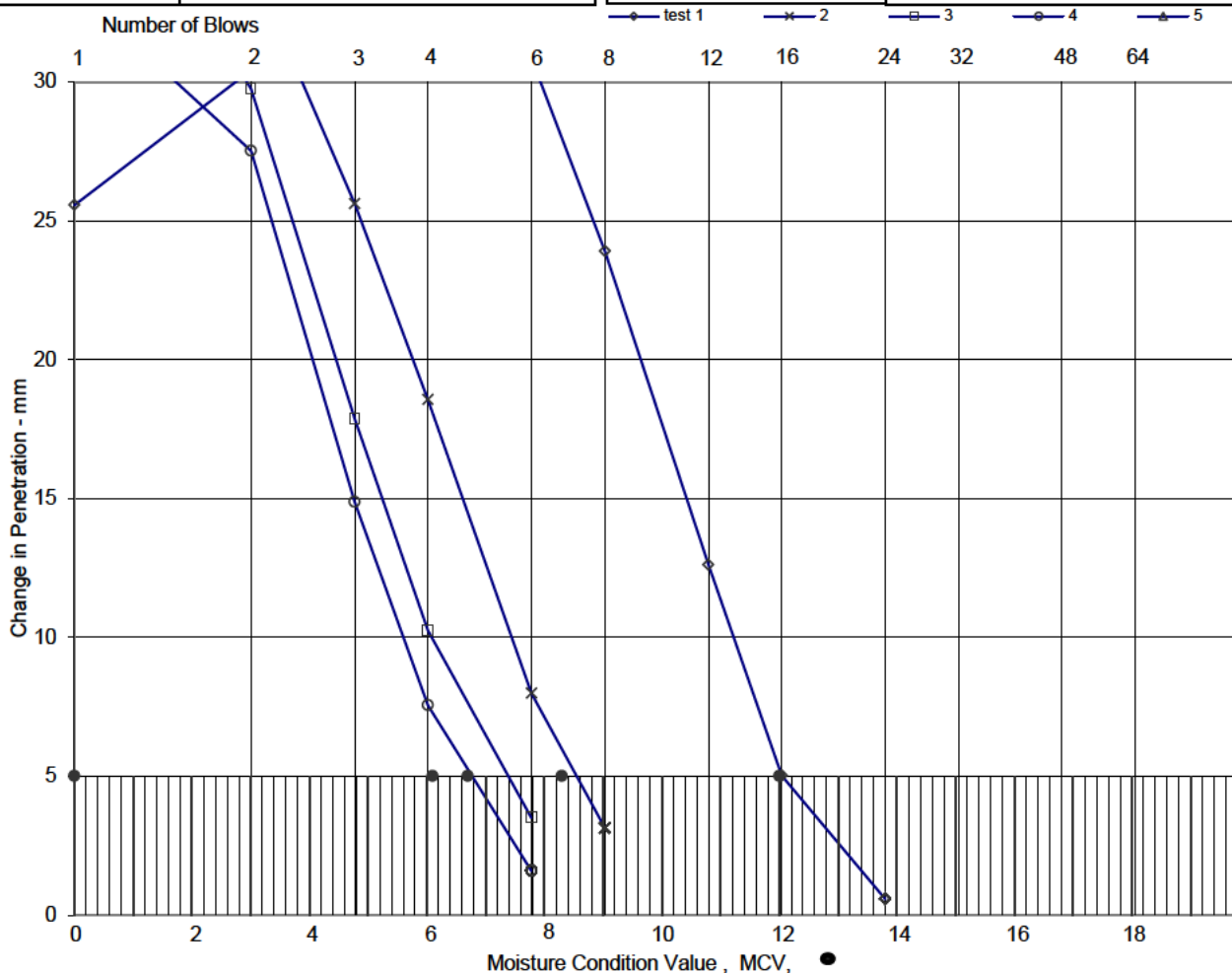
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MOISTURE CONDITION VALUE (MCV) / MOISTURE CONTENT

Sample Details:	SAMPLE ID:	Hole No	ATK-TPM-04
	A9031-1920191204125101	Sample Depth (m BGL)	1.50 - 1.60
		Sample Type and No	B7
		Specimen Ref	



Test No	* ineffective / invalid point	1	2	3	4	*
Moisture Condition Value		12.0	8.3	6.7	6.1	
Moisture Content	%	28.0	33.0	36.0	37.0	
Bulk density after test	Mg/m³	1.97	1.94	1.90	1.86	
Dry density after test	Mg/m³	1.54	1.46	1.40	1.36	
Vane shear strength	kPa	69	46	26	20	

Soil description	Brown slightly sandy slightly gravelly CLAY.
Procedure / Preparation	using single sample
Remarks	

Initial moisture content <20mm	%	27.6
Material retained on 20mm sieve	%	0

Method of determining MCV
Steepest straight line

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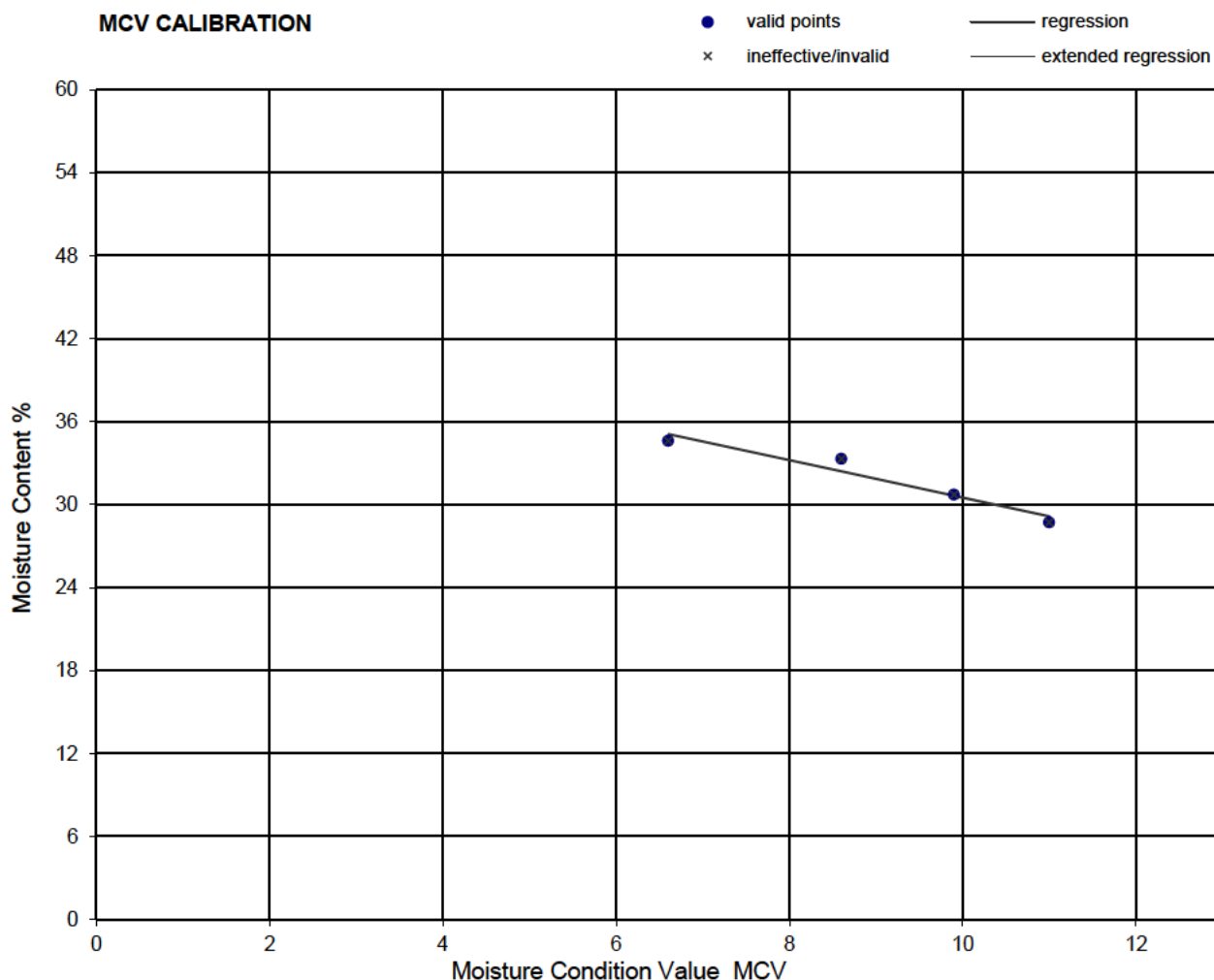
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MOISTURE CONDITION VALUE (MCV) / MOISTURE CONTENT

Sample Details:	SAMPLE ID:	Hole No	ATK-TPM-05
	A9031-19-20191120032002	Sample Depth (m BGL)	1.60 - 1.70
		Sample Type and No	B8
		Specimen Ref	



Characteristics of calibration line (determined using linear regression)	
Intercept	44.0
Slope	-1.35
Sensitivity (Change in MCV per 1% moisture content)	0.74
Correlation (proximity of test points to regression line)	-0.97
Method of interpretation of MCV	Steepest straight line

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QA Ref
SLR 4,5,5
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Figure
MCVREL

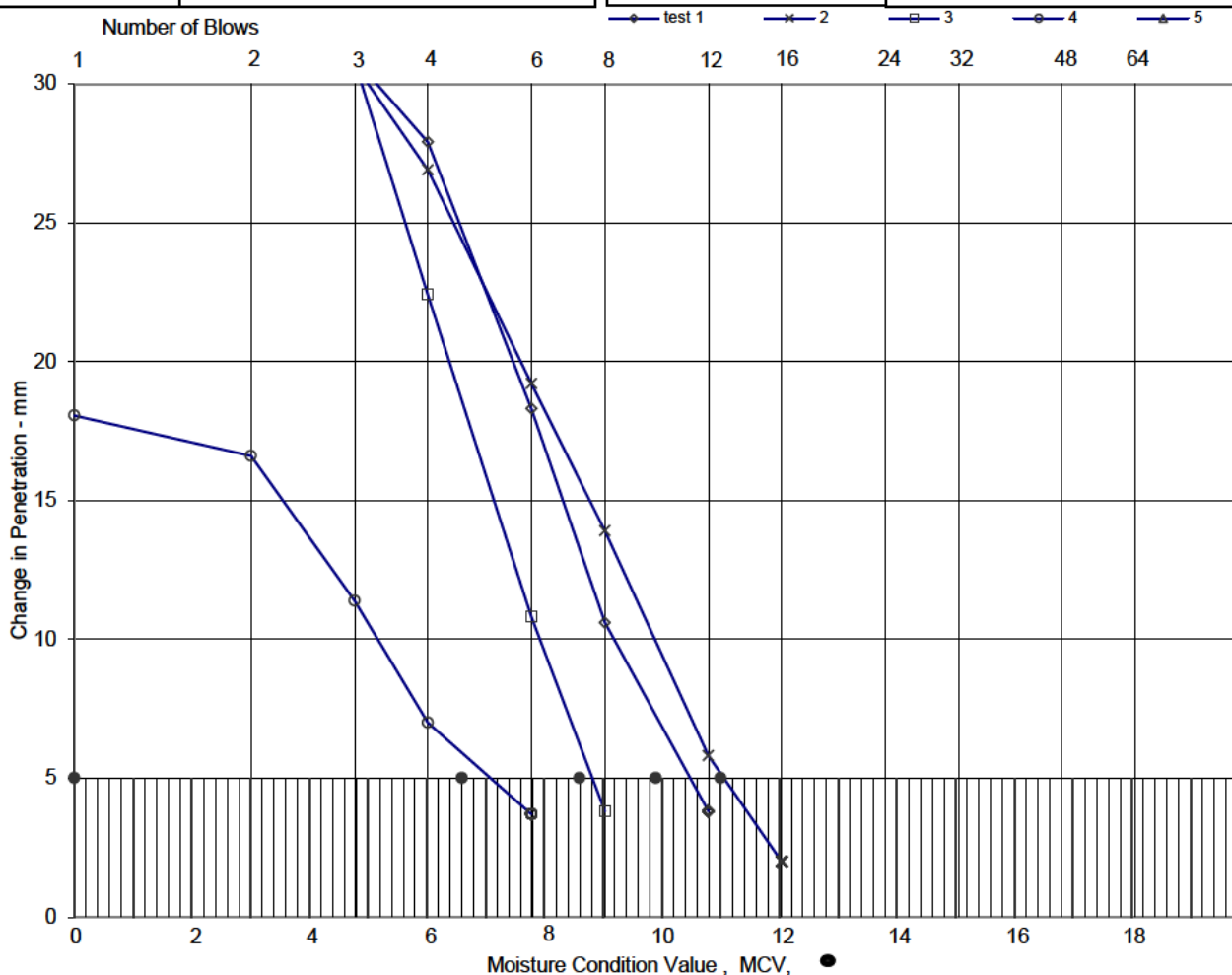
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MOISTURE CONDITION VALUE (MCV) / MOISTURE CONTENT

Sample Details:	SAMPLE ID:	Hole No	ATK-TPM-05
	A9031-19-20191120032002	Sample Depth (m BGL)	1.60 - 1.70
		Sample Type and No	B8
		Specimen Ref	



Test No	* ineffective / invalid point	1	2	3	4	*
Moisture Condition Value		9.9	11.0	8.6	6.6	
Moisture Content	%	31.0	29.0	33.0	35.0	
Bulk density after test	Mg/m ³	1.57	1.58	1.54	1.30	
Dry density after test	Mg/m ³	1.20	1.23	1.16	0.97	
Vane shear strength	kPa	58	60	40	30	

Soil description	Brown slightly sandy slightly gravelly CLAY.
Procedure / Preparation	using single sample
Remarks	

Initial moisture content <20mm	%	30.7
Material retained on 20mm sieve	%	0

Method of determining MCV
Steepest straight line

QA Ref
SLR 4,5,5
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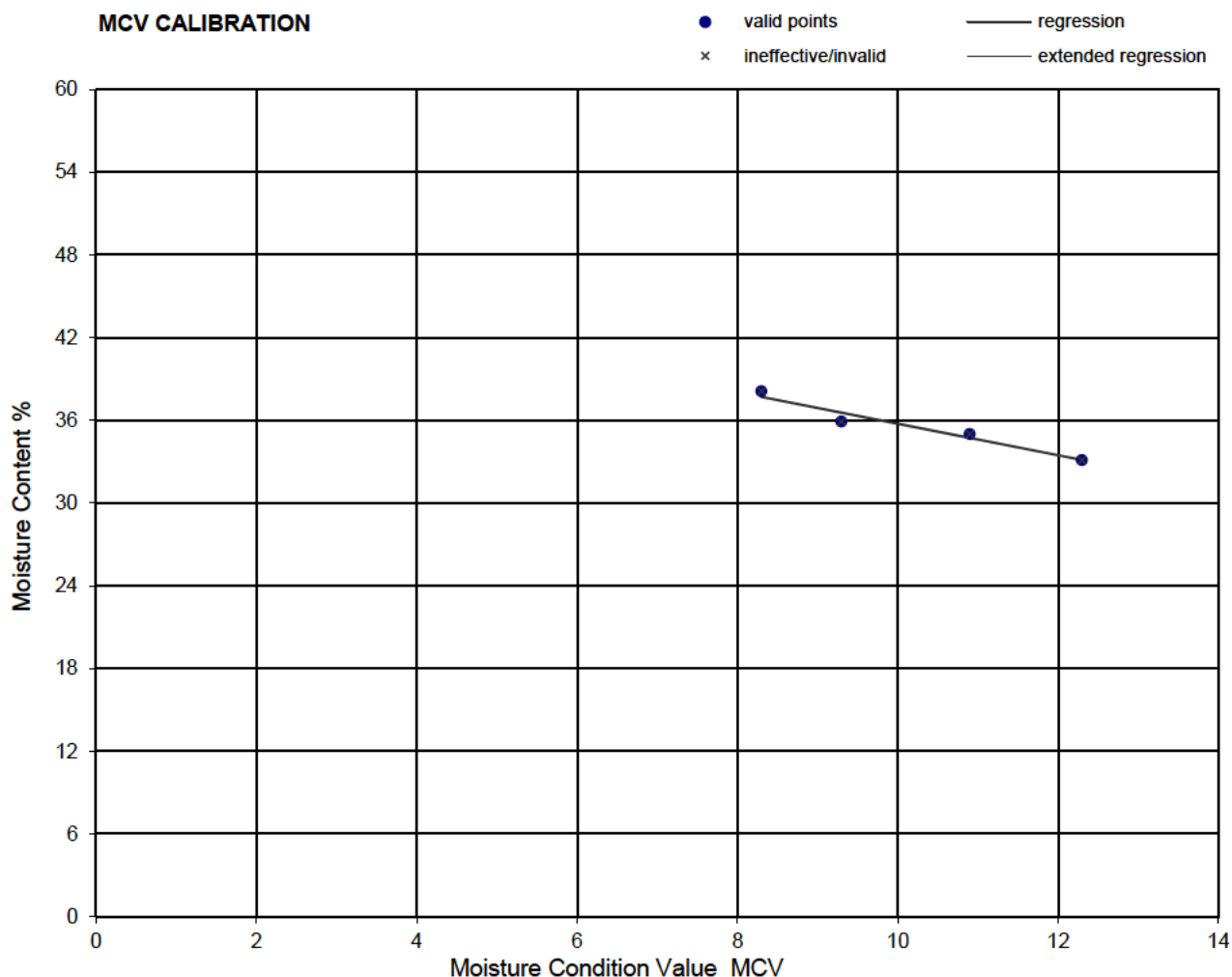
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MOISTURE CONDITION VALUE (MCV) / MOISTURE CONTENT

Sample Details:	SAMPLE ID:	Hole No	ATK-TPM-05
	A9031-19-20191120032311	Sample Depth (m BGL)	2.90 - 3.00
		Sample Type and No	B12
		Specimen Ref	



Characteristics of calibration line (determined using linear regression)	
Intercept	47.2
Slope	-1.15
Sensitivity (Change in MCV per 1% moisture content)	0.87
Correlation (proximity of test points to regression line)	-0.97
Method of interpretation of MCV	Steepest straight line

The above characteristics are NOT covered by UKAS accreditation to BS1377

QA Ref
SLR 4,5,5
Rev 2.8
Jun 19



Project No A9031-19
Project Name HAVANT THICKET WATER STORAGE

Figure
MCVREL

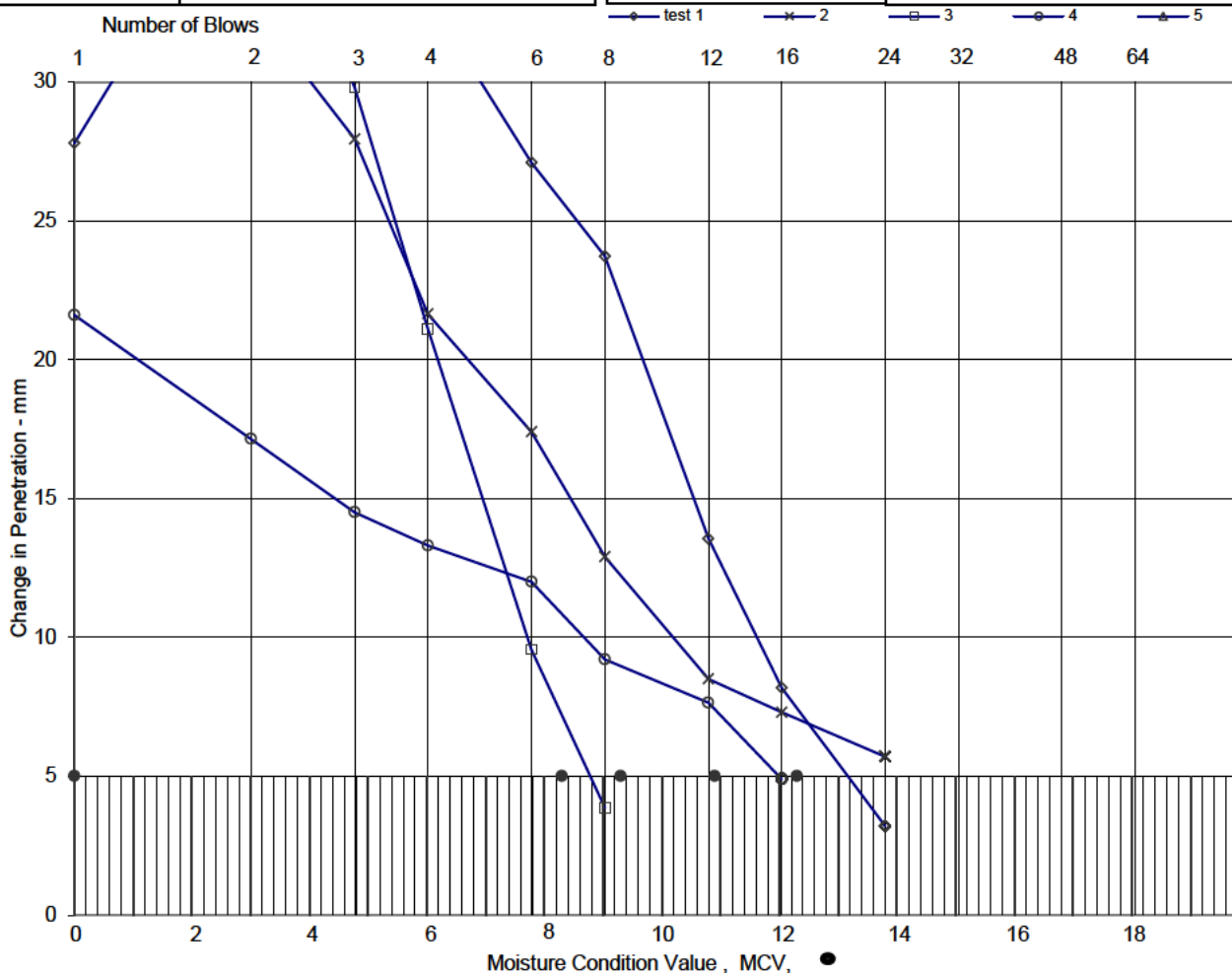
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MOISTURE CONDITION VALUE (MCV) / MOISTURE CONTENT

Sample Details:	SAMPLE ID:	Hole No	ATK-TPM-05
	A9031-19-20191120032311	Sample Depth (m BGL)	2.90 - 3.00
		Sample Type and No	B12
		Specimen Ref	



Test No	* ineffective / invalid point	1	2	3	4	*
Moisture Condition Value		12.3	9.3	8.3	10.9	
Moisture Content	%	33.0	36.0	38.0	35.0	
Bulk density after test	Mg/m ³	1.92	1.89	1.83	1.81	
Dry density after test	Mg/m ³	1.44	1.39	1.33	1.34	
Vane shear strength	kPa	56	40	24	20	

Soil description	Brown slightly sandy slightly gravelly CLAY.
Procedure / Preparation	using single sample
Remarks	

Initial moisture content <20mm	%	33.1
Material retained on 20mm sieve	%	0

Method of determining MCV
Steepest straight line

QA Ref
SLR 4,5,5
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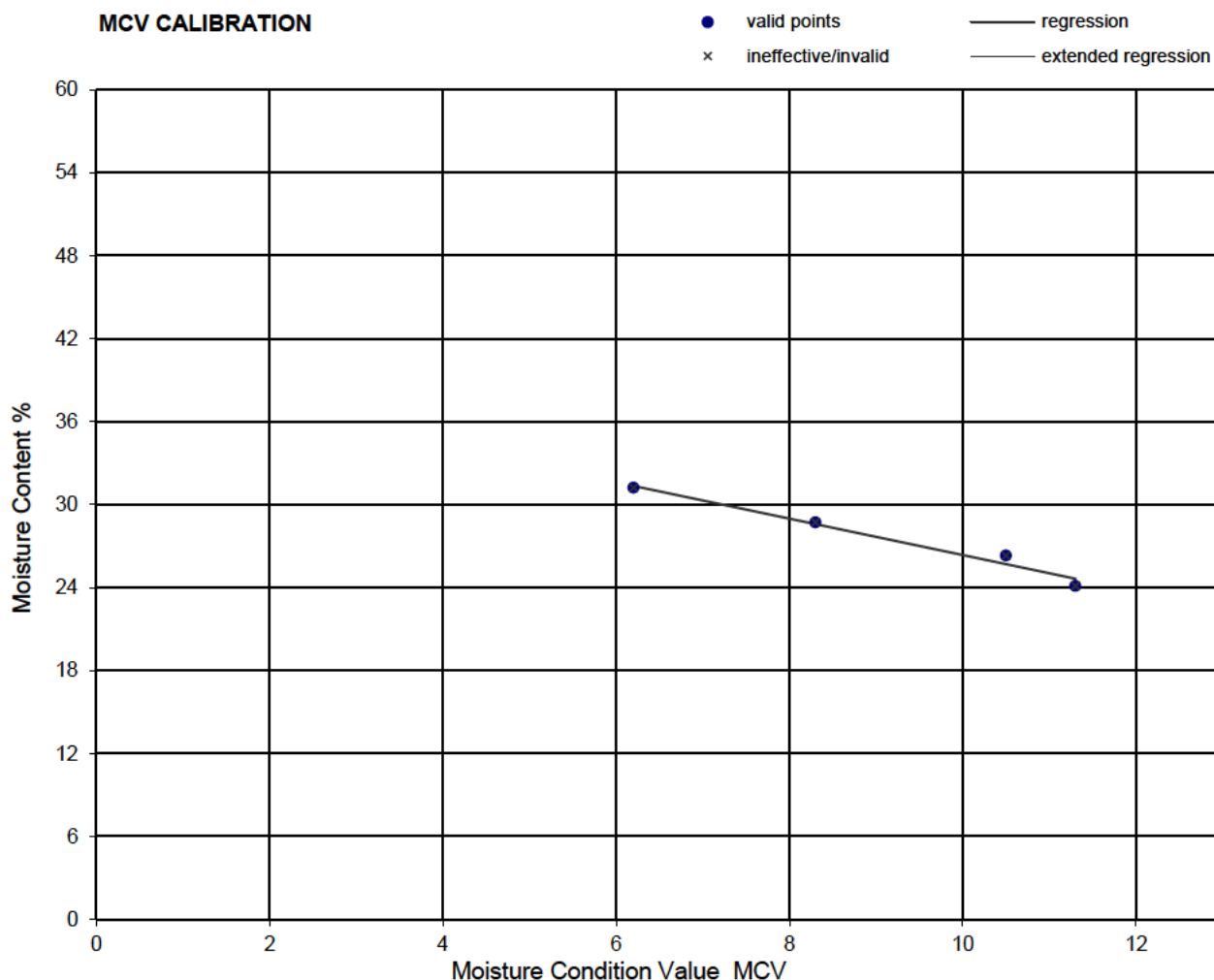
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MCVREL

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MOISTURE CONDITION VALUE (MCV) / MOISTURE CONTENT

Sample Details:	SAMPLE ID:	Hole No	ATK-TPM-05
	A9031-19-20191120032444	Sample Depth (m BGL)	4.40 - 4.50
		Sample Type and No	B17
		Specimen Ref	



Characteristics of calibration line (determined using linear regression)	
Intercept	39.5
Slope	-1.32
Sensitivity (Change in MCV per 1% moisture content)	0.76
Correlation (proximity of test points to regression line)	-0.99
Method of interpretation of MCV	Steepest straight line

The above characteristics are NOT covered by UKAS accreditation to BS1377

QA Ref
SLR 4,5,5
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Jun 19



Project No A9031-19
Project Name HAVANT THICKET WATER STORAGE

Figure
MCVREL

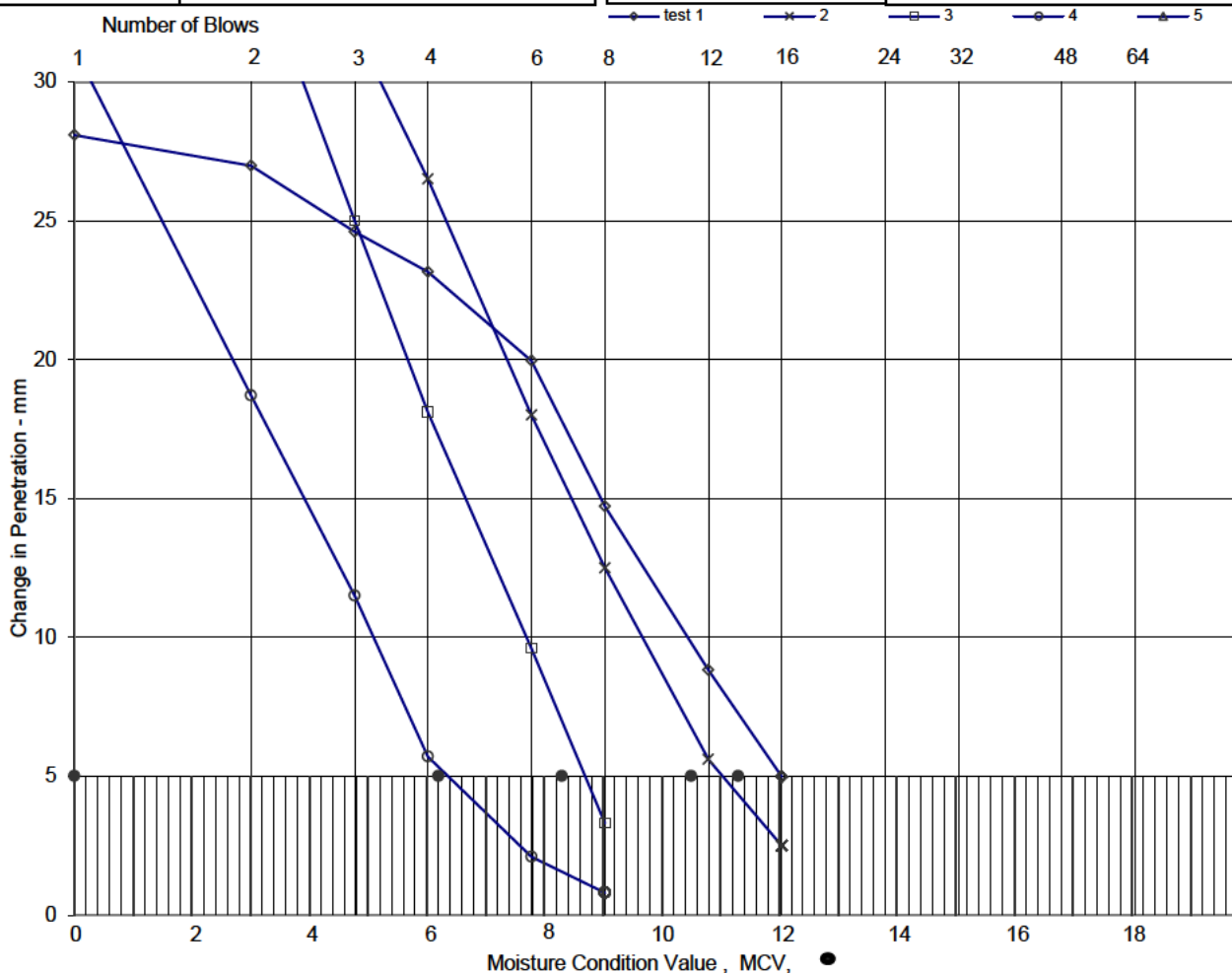
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MOISTURE CONDITION VALUE (MCV) / MOISTURE CONTENT

Sample Details:	SAMPLE ID:	Hole No	ATK-TPM-05
	A9031-19-20191120032444	Sample Depth (m BGL)	4.40 - 4.50
		Sample Type and No	B17
		Specimen Ref	



Test No	* ineffective / invalid point	1	2	3	4	*
Moisture Condition Value		11.3	10.5	8.3	6.2	
Moisture Content	%	24.0	26.0	29.0	31.0	
Bulk density after test	Mg/m ³	2.06	1.97	1.92	1.87	
Dry density after test	Mg/m ³	1.66	1.56	1.49	1.43	
Vane shear strength	kPa	85	70	44	24	

Soil description	Brown slightly sandy CLAY.
Procedure / Preparation	using single sample
Remarks	

Initial moisture content <20mm	%	24.1
Material retained on 20mm sieve	%	0

Method of determining MCV
Steepest straight line

QA Ref
SLR 4,5,5
Rev 2.8
Jun 19



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Figure
MCVREL

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UNCONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TESTS WITHOUT MEASUREMENT OF PORE PRESSURE - SUMMARY OF RESULTS

Hole No.	Sample				Soil Description	Density		w	Test type	Dia.	ø3	At failure / end of stage				Membrane Thickness	Remarks
	No.	Depth (m)		type		bulk	dry					Axial strain	σ1 - σ3	CU	M O D E		
		from	to														
						Mg/m3		%		mm	kPa	%	kPa	kPa		mm	
ATK-CP-01	11	2.00		UT	Firm yellowish brown slightly sandy silty CLAY.	1.95	1.51	30	UU	103.3	50	19.8	134	67	C	0.2	
ATK-CP-01	19	4.00		UT	Stiff greyish brown slightly sandy silty CLAY.	2.04	1.65	24	UU	103.9	90	9	196	98	B	0.2	
ATK-CP-01	53	13.00		UT	Stiff thinly laminated greyish brown slightly sandy CLAY.	2	1.6	25	UU	103.5	250	8.6	282	141	C	0.2	
ATK-CP-01	65	16.00		UT	Very stiff thinly laminated greyish brown slightly sandy CLAY.	2.02	1.6	26	UU	103	300	3.5	200	100	B	0.2	
ATK-CP-02	29	9.00	9.45	UT	Stiff greyish brown slightly sandy silty CLAY.	2.06	1.67	24	UU	103.7	200	18.9	351	175	B	0.3	
ATK-CP-02	57	17.50	17.95	UT	Firm to stiff brownish grey slightly sandy CLAY.	2.01	1.58	27	UU	103.6	350	7.9	209	104	B	0.3	
ATK-CP-03	7	1.20		UT	Firm to stiff brown slightly sandy slightly gravelly CLAY. Gravel is mainly mudstone.	2.02	1.57	29	UU	103.1	50	6.4	116	58	B	0.3	
ATK-CP-03	15	3.00	3.45	UT	Very stiff brown slightly sandy CLAY.	1.95	1.47	33	UU	102.6	70	5.5	131	65	B	0.3	
ATK-CP-04	26	6.00		UT	Firm to stiff greyish brown slightly sandy silty CLAY.	2.04	1.63	25	UU	103	130	11.9	167	84	C	0.2	
ATK-CP-05	45	11.50		UT	Very stiff reddish brown mottled grey slightly sandy CLAY.	2.27	1.98	14	UU	103.4	220	10	298	149	C	0.2	
ATK-CP-05	65	17.50		UT	Very stiff reddish brown mottled grey slightly sandy CLAY.	2.22	1.93	15	UU	103.2	350	9.6	770	385	B	0.2	
ATK-CP-06	41	10.00	10.45	UT	Firm to stiff reddish brown mottled grey slightly sandy CLAY.	2.16	1.81	19	UU	102.8	110	19.6	163	82	C	0.3	
ATK-CP-06	51	13.00	13.40	UT	Stiff reddish brown mottled grey slightly sandy CLAY.	2.19	1.89	16	UU	103.2	150	4.9	429	215	B	0.3	
ATK-CP-07A	13	4.00	4.45	UT	Very stiff reddish brown mottled grey slightly sandy CLAY.	2.15	1.8	19	UU	103	90	4.5	305	153	B	0.2	
ATK-CP-07A	21	6.00	6.40	UT	Very stiff reddish brown mottled grey slightly sandy CLAY.	2.26	2.03	12	UU	104.1	130	8.9	835	417	B	0.2	
ATK-CP-07A	28	8.00	8.35	UT	Very stiff grey mottled reddish brown slightly sandy CLAY.	2.18	1.85	18	UU	103.3	170	2.2	252	126	B	0.2	
ATK-CP-07A	35	10.00	10.35	UT	Very stiff reddish brown mottled grey and brown slightly sandy CLAY.	2.22	1.92	16	UU	103.9	210	7.7	936	468	B	0.2	
ATK-CP-08	9	2.20	2.65	UT	Firm brown slightly sandy silty CLAY.	2	1.59	26	UU	103.5	50	14.4	91	46	C	0.2	
ATK-CP-08	15	4.20	4.65	UT	Very stiff reddish brown slightly sandy CLAY.	2.12	1.76	20	UU	102.9	100	13.4	144	72	B	0.2	
ATK-CP-09	16	4.20	4.65	UT	Stiff reddish brown mottled grey slightly sandy CLAY.	2.14	1.78	20	UU	103.5	100	18.4	171	85	B	0.2	
ATK-CP-10	12	3.00	3.45	UT	Stiff brown slightly sandy CLAY.	1.92	1.46	31	UU	103.7	70	4.5	186	93	B	0.2	
ATK-CP-10	26	7.00	7.45	UT	Very stiff thinly laminated dark brown slightly sandy CLAY.	2.04	1.65	23	UU	103	140	8.6	269	135	B	0.3	

General notes: Tests carried out in accordance with BS1377: Part 7: 1990, clause 8 for single stage, clause 9 for multistage tests. Specimens nominally 2:1 height diameter ratio and tested at a rate of strain of 2%/minute, unless annotated otherwise. Latex rubber membrane used and membrane correction applied in accordance with BS1377-7 8.5.1.4 unless stated. Tested from base depth and in a vertical orientation unless stated otherwise.

Legend UU - single stage test (may be in sets of specimens) ϕ_3 cell pressure Mode of failure P plastic
UUM - multistage test on a single specimen $\phi_1 - \phi_3$ deviator stress B brittle
suffix R - remoulded or recompacted CU undrained shear strength C compound

QA Ref SLR 2 Rev 2.8 Apr 19	 SOCOTEC	Project No	A9031-19	Figure	UUSUM
		Project Name	HAVANT THICKET WATER STORAGE		
		The results reported relate only to the samples tested; test carried out outside the scope of UKAS accreditation. © Copyright 2019 SOCOTEC UK Limited			

UNCONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TESTS WITHOUT MEASUREMENT OF PORE PRESSURE - SUMMARY OF RESULTS

Hole No.	Sample				Soil Description	Density		w	Test type	Dia.	ø3	At failure / end of stage				Membrane Thickness	Remarks
	No.	Depth (m)		type		bulk	dry					Axial strain	σ1 - σ3	CU	M O D E		
		from	to														
ATK-CP-11	11	2 00		UT	Stiff light brown mottled grey slightly sandy CLAY.	1.93	1.48	30	UU	103 2	50	4.5	127	63	B	0.3	
ATK-CP-11	43	10.00		UT	Very stiff thinly laminated greyish brown slightly sandy CLAY.	2.04	1.65	23	UU	104 3	200	7.9	413	207	B	0.3	
ATK-CP-13A	19	4 00		UT	Firm multicoloured slightly sandy slightly gravelly CLAY. Gravel is mainly mudstone.	2.14	1.78	20	UU	103.1	80	19.8	167	83	C	0.2	
ATK-CP-13A	27	6 00		UT	Soft reddish brown mottled grey slightly sandy CLAY becoming stiff towards base.	2 2	1.86	18	UU	103 3	130	19.8	180	90	C	0.3	
ATK-CP-13A	35	8 00		UT	Stiff reddish brown mottled grey slightly sandy CLAY.	2.22	1 9	17	UU	103 6	160	10.4	309	154	B	0.3	
ATK-CP-13A	43	10.00		UT	Very stiff reddish brown mottled grey slightly sandy CLAY.	2.22	1.88	18	UU	103 2	200	5.2	258	129	B	0.3	
ATK-CP-14	14	4 00	4.45	UT	Stiff greyish brown slightly sandy silty CLAY.	2.06	1.69	22	UU	104	90	18.8	209	104	B	0.3	
ATK-CP-15	7	1 20		UT	Firm brown slightly sandy slightly gravelly CLAY.	1.96	1 5	31	UU	102.7	30	18.3	52	26	C	0.3	
ATK-CP-15	37	9 00		UT	Grey slightly silty CLAY	2	1.58	27	UU	103 5	180	1.5	119	60	B	0.3	
ATK-CP-15	48	12.00		UT	Very stiff thinly laminated dark brown slightly sandy CLAY.	2.03	1.61	26	UU	102 9	240	4.5	395	198	B	0.3	
ATK-CP-15	59	15.00		UT	Stiff thinly laminated dark brown slightly sandy slightly gravelly CLAY.	2.06	1.65	25	UU	103 3	300	14.9	162	81	B	0.3	
ATK-CP-15	80	21.00		UT	Very stiff reddish brown slightly sandy CLAY.	2.35	2.13	10	UU	102 6	420	5.7	2,050	1,025	B	0.3	
ATK-CP-16	6	3 00		UT	Firm to stiff reddish brown mottled grey slightly sandy CLAY.	2.09	1.69	24	UU	103.4	60	19.9	116	58	C	0.3	
ATK-CP-16	21	7 00	7.45	UT	Very stiff reddish brown mottled grey slightly sandy CLAY.	2.17	1.83	18	UU	103 8	140	4	240	120	B	0.3	
ATK-CP-16	28	9 00	9.45	UT	Very stiff brown mottled grey slightly sandy CLAY.	2.16	1.83	18	UU	103 8	180	4.5	251	126	B	0.3	
ATK-RC-02	27	6 00		UT	Firm greyish brown slightly sandy silty CLAY.	2.04	1.64	24	UU	103 5	130	19.3	159	80	P	0.3	

General notes: Tests carried out in accordance with BS1377: Part 7: 1990, clause 8 for single stage, clause 9 for multistage tests. Specimens nominally 2:1 height diameter ratio and tested at a rate of strain of 2%/minute, unless annotated otherwise. Latex rubber membrane used and membrane correction applied in accordance with BS1377-7 8.5.1.4 unless stated. Tested from base depth and in a vertical orientation unless stated otherwise.

Legend UU - single stage test (may be in sets of specimens) σ3 cell pressure Mode of failure P plastic
UUM - multistage test on a single specimen σ1 - σ3 deviator stress B brittle
suffix R - remoulded or recompacted CU undrained shear strength C compound

QA Ref SLR 2 Rev 2.8 Apr 19	 SOCOTEC	Project No	A9031-19	Figure
		Project Name	HAVANT THICKET WATER STORAGE	UUSUM
		The results reported relate only to the samples tested; test carried out outside the scope of UKAS accreditation. © Copyright 2019 SOCOTEC UK Limited		Printed: 28/02/2020 09:39

Shear Strength by Pilcon Hand method - Summary of Results

Hole No.	Sample				Spec ref	Soil Description	Undrained shear strength kPa	Residual shear strength kPa	Remarks
	No.	Depth (m)		type					
		from	to						
ATK-BH-02	3	0.50	0.80	B		Brown slightly sandy CLAY.	60		tested at 14.7% mc
ATK-BH-02	3	0.50	0.80	B		Brown slightly sandy CLAY.	58		tested at 20% mc
ATK-BH-02	3	0.50	0.80	B		Brown slightly sandy CLAY.	50		tested at 16.4% mc
ATK-BH-02	3	0.50	0.80	B		Brown slightly sandy CLAY.	46		tested at 18.4% mc
ATK-BH-02	3	0.50	0.80	B		Brown slightly sandy CLAY.	30		tested at 22.4% mc
ATK-CP-01	4	0.50	0.80	B		Brown slightly sandy CLAY.	16		tested at 26.8% mc
ATK-CP-01	4	0.50	0.80	B		Brown slightly sandy CLAY.	28		tested at 23.1% mc
ATK-CP-01	4	0.50	0.80	B		Brown slightly sandy CLAY.	46		tested at 19.8% mc
ATK-CP-01	4	0.50	0.80	B		Brown slightly sandy CLAY.	54		tested at 16.6% mc
ATK-CP-01	4	0.50	0.80	B		Brown slightly sandy CLAY.	80		tested at 13.5% mc
ATK-CP-01	17	3.50	4.00	B		Brown slightly sandy CLAY.	76		Tested at 16.2% mc
ATK-CP-01	17	3.50	4.00	B		Brown slightly sandy CLAY.	72		Tested at 21.15% mc
ATK-CP-01	17	3.50	4.00	B		Brown slightly sandy CLAY.	68		Tested at 23.1% mc
ATK-CP-01	17	3.50	4.00	B		Brown slightly sandy CLAY.	64		Tested at 19.2% mc
ATK-CP-01	17	3.50	4.00	B		Brown slightly sandy CLAY.	46		Tested at 25.1% mc
ATK-CP-02	5	1.20	1.70	B		Brown slightly sandy CLAY.	30		tested at 22.8% mc
ATK-CP-02	5	1.20	1.70	B		Brown slightly sandy CLAY.	42		tested at 21% mc
ATK-CP-02	5	1.20	1.70	B		Brown slightly sandy CLAY.	52		tested at 17.3 mc
ATK-CP-02	5	1.20	1.70	B		Brown slightly sandy CLAY.	60		tested at 15.3% mc
ATK-CP-02	5	1.20	1.70	B		Brown slightly sandy CLAY.	76		tested at 12.15 mc
ATK-CP-03	12	2.00	2.50	B		Brown slightly sandy CLAY.	80		Tested at 14.6% mc
ATK-CP-03	12	2.00	2.50	B		Brown slightly sandy CLAY.	70		Tested at 17% mc
ATK-CP-03	12	2.00	2.50	B		Brown slightly sandy CLAY.	66		Tested at 19.6%mc
ATK-CP-03	12	2.00	2.50	B		Brown slightly sandy CLAY.	60		Tested at 22.6% mc

Notes : 1 Tests carried out in accordance with Manufacturers Instructions

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Shear Strength by Pilcon Hand method - Summary of Results

Hole No.	Sample				Spec ref	Soil Description	Undrained shear strength kPa	Residual shear strength kPa	Remarks
	No.	Depth (m)		type					
		from	to						
ATK-CP-03	12	2.00	2.50	B		Brown slightly sandy CLAY.	50		Tested at 24.8
ATK-CP-04	6	0.80	1.20	B		Brown slightly sandy CLAY.	66		Tested at 14.8% mc
ATK-CP-04	6	0.80	1.20	B		Brown slightly sandy CLAY.	60		Tested at 16.9% mc
ATK-CP-04	6	0.80	1.20	B		Brown slightly sandy CLAY.	52		Tested at 18.5% mc
ATK-CP-04	6	0.80	1.20	B		Brown slightly sandy CLAY.	46		Tested at 20.3% mc
ATK-CP-04	6	0.80	1.20	B		Brown slightly sandy CLAY.	30		Tested at 22% mc
ATK-CP-04	13	2.50	3.00	B	1	Brown slightly sandy CLAY.	60		
ATK-CP-06	7	1.00		B	1	Light brown slightly sandy slightly gravelly CLAY.	70.7		
ATK-CP-06	16	3.00	3.50	B		Dark brown slightly sandy CLAY.	64		Tested at 15.5% mc
ATK-CP-06	16	3.00	3.50	B		Dark brown slightly sandy CLAY.	60		Tested at 19.2% mc
ATK-CP-06	16	3.00	3.50	B		Dark brown slightly sandy CLAY.	54		Tested at 20.5% mc
ATK-CP-06	16	3.00	3.50	B		Dark brown slightly sandy CLAY.	50		Tested at 13.2% mc
ATK-CP-06	16	3.00	3.50	B		Dark brown slightly sandy CLAY.	44		Tested at 10.8% mc
ATK-CP-07	7	2.00	2.45	UT	1	Brown slightly sandy CLAY.	13		
ATK-CP-07A	11	3.50	4.00	B	1	Brown slightly sandy CLAY.	24.7		
ATK-CP-07A	32	9.00	9.50	B		Brown slightly sandy CLAY.	80		Tested at 17.9% mc
ATK-CP-07A	32	9.00	9.50	B		Brown slightly sandy CLAY.	66		Tested at 19.3% mc
ATK-CP-07A	32	9.00	9.50	B		Brown slightly sandy CLAY.	94		Tested at 15.8% mc
ATK-CP-07A	32	9.00	9.50	B		Brown slightly sandy CLAY.	60		Tested at 21.8% mc
ATK-CP-07A	32	9.00	9.50	B		Brown slightly sandy CLAY.	54		Tested at 23.5% mc
ATK-CP-07A	33	9.50	10.00	B	1	Brown slightly sandy CLAY.	78.7		
ATK-CP-08	11	2.65	3.20	B		Brown slightly sandy slightly gravelly CLAY.	30		Tested at 25% mc
ATK-CP-08	11	2.65	3.20	B		Brown slightly sandy slightly gravelly CLAY.	46		Tested at 23.1% mc
ATK-CP-08	11	2.65	3.20	B		Brown slightly sandy slightly gravelly CLAY.	54		Tested at 18.5% mc

Notes : 1 Tests carried out in accordance with Manufacturers Instructions

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Shear Strength by Pilcon Hand method - Summary of Results

Hole No.	Sample				Spec ref	Soil Description	Undrained shear strength kPa	Residual shear strength kPa	Remarks
	No.	Depth (m)		type					
		from	to						
ATK-CP-08	11	2.65	3.20	B		Brown slightly sandy slightly gravelly CLAY.	62		Tested at 16.7% mc
ATK-CP-08	11	2.65	3.20	B		Brown slightly sandy slightly gravelly CLAY.	78		Tested at 13.5% mc
ATK-CP-08	13	3.20	3.65	B	1	Brown slightly sandy CLAY.	76.7		
ATK-CP-08	17	4.65	5.20	B	1	Grey and reddish brown slightly sandy CLAY.	27.3		
ATK-CP-08	27	7.65	8.20	B		Brown slightly sandy CLAY.	30		Tested at 22% mc
ATK-CP-08	27	7.65	8.20	B		Brown slightly sandy CLAY.	48		Tested at 19.6% mc
ATK-CP-08	27	7.65	8.20	B		Brown slightly sandy CLAY.	58		Tested at 16.3% mc
ATK-CP-08	27	7.65	8.20	B		Brown slightly sandy CLAY.	62		Tested at 14.8% mc
ATK-CP-08	27	7.65	8.20	B		Brown slightly sandy CLAY.	80		Tested at 12.9% mc
ATK-CP-08	29	8.20	8.65	B	1	Brown mottled grey slightly sandy CLAY.	68		
ATK-CP-09	18	4.65	5.20	B		Brown slightly sandy CLAY.	140		Tested at 22% mc
ATK-CP-09	18	4.65	5.20	B		Brown slightly sandy CLAY.	140		Tested at 19.9% mc
ATK-CP-09	18	4.65	5.20	B		Brown slightly sandy CLAY.	140		Tested at 17.3% mc
ATK-CP-09	18	4.65	5.20	B		Brown slightly sandy CLAY.	140		Tested at 15.3% mc
ATK-CP-09	18	4.65	5.20	B		Brown slightly sandy CLAY.	140		Tested at 13.3% mc
ATK-CP-09	24	6.50	6.95	B	1	Reddish brown slightly sandy CLAY.	56.7		
ATK-CP-09	25	6.95	7.20	B		Brown slightly sandy CLAY.	62		tested at 14.9% mc
ATK-CP-09	25	6.95	7.20	B		Brown slightly sandy CLAY.	58		tested at 116.6% mc
ATK-CP-09	25	6.95	7.20	B		Brown slightly sandy CLAY.	46		tested at 18.2% mc
ATK-CP-09	25	6.95	7.20	B		Brown slightly sandy CLAY.	40		tested at 22%mc
ATK-CP-09	25	6.95	7.20	B		Brown slightly sandy CLAY.	36		tested at 24.5% mc
ATK-CP-09	28	7.65	8.20	B		Brown slightly sandy CLAY.	68		Tested at 15.5% mc
ATK-CP-09	28	7.65	8.20	B		Brown slightly sandy CLAY.	60		Tested at 17% mc
ATK-CP-09	28	7.65	8.20	B		Brown slightly sandy CLAY.	54		Tested at 18.8% mc

Notes : 1 Tests carried out in accordance with Manufacturers Instructions

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Shear Strength by Pilcon Hand method - Summary of Results

Hole No.	Sample				Spec ref	Soil Description	Undrained shear strength kPa	Residual shear strength kPa	Remarks
	No.	Depth (m)		type					
		from	to						
ATK-CP-09	28	7.65	8.20	B		Brown slightly sandy CLAY.	50		Tested at 21% mc
ATK-CP-09	28	7.65	8.20	B		Brown slightly sandy CLAY.	42		Tested at 23.1%
ATK-CP-09	31	8.65	9.20	B	1	Brown slightly sandy CLAY.	69.3		
ATK-CP-10	5	1.20	1.65	UT	1	Brown slightly sandy CLAY.	70		
ATK-CP-10	14	3.50	4.00	B		Brown slightly sandy CLAY.	16		Tested at 30 2% mc
ATK-CP-10	14	3.50	4.00	B		Brown slightly sandy CLAY.	28		Tested at 26 8% mc
ATK-CP-10	14	3.50	4.00	B		Brown slightly sandy CLAY.	36		Tested at 23 8% mc
ATK-CP-10	14	3.50	4.00	B		Brown slightly sandy CLAY.	12		Tested at 32 2% mc
ATK-CP-10	14	3.50	4.00	B		Brown slightly sandy CLAY.	10		Tested at 34% mc
ATK-CP-11	8	1.20	1.70	B		Brown slightly sandy slightly gravelly CLAY.	68		Tested at 13 8% mc
ATK-CP-11	8	1.20	1.70	B		Brown slightly sandy slightly gravelly CLAY.	60		Tested at 15 2% mc
ATK-CP-11	8	1.20	1.70	B		Brown slightly sandy slightly gravelly CLAY.	50		Tested at 21 2% mc
ATK-CP-11	8	1.20	1.70	B		Brown slightly sandy slightly gravelly CLAY.	46		Tested at 20.7% mc
ATK-CP-11	8	1.20	1.70	B		Brown slightly sandy slightly gravelly CLAY.	40		Tesed at 18.4% mc
ATK-CP-11	24	5.00	5.50	B		Brown slightly sandy CLAY.	18		Tested at 29.7% mc
ATK-CP-11	24	5.00	5.50	B		Brown slightly sandy CLAY.	28		Tested at 25% mc
ATK-CP-11	24	5.00	5.50	B		Brown slightly sandy CLAY.	24		Tested at 26 5% mc
ATK-CP-11	24	5.00	5.50	B		Brown slightly sandy CLAY.	34		Tested at 22 9% mc
ATK-CP-11	24	5.00	5.50	B		Brown slightly sandy CLAY.	44		Tested at 20.7% mc
ATK-CP-12	6	1.20	1.70	B		Brown slightly sandy slightly gravelly CLAY.	62		Tested at 15 9% mc
ATK-CP-12	6	1.20	1.70	B		Brown slightly sandy slightly gravelly CLAY.	58		Tested at 17 6% mc
ATK-CP-12	6	1.20	1.70	B		Brown slightly sandy slightly gravelly CLAY.	48		Tested at 21 9% mc
ATK-CP-12	6	1.20	1.70	B		Brown slightly sandy slightly gravelly CLAY.	42		Tested at 19 9% mc
ATK-CP-12	6	1.20	1.70	B		Brown slightly sandy slightly gravelly CLAY.	36		Tested at 23 8% mc

Notes : 1 Tests carried out in accordance with Manufacturers Instructions

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Shear Strength by Pilcon Hand method - Summary of Results

Hole No.	Sample				Spec ref	Soil Description	Undrained shear strength kPa	Residual shear strength kPa	Remarks
	No.	Depth (m)		type					
		from	to						
ATK-CP-12	8	2.00	2.45	UT	1	Brown slightly sandy CLAY.	20		
ATK-CP-12	12	3.00	3.50	B		Brown slightly sandy CLAY.	30		Tested at 13.6% mc
ATK-CP-12	12	3.00	3.50	B		Brown slightly sandy CLAY.	26		Tested at 17.2% mc
ATK-CP-12	12	3.00	3.50	B		Brown slightly sandy CLAY.	22		Tested at 20.2% mc
ATK-CP-12	12	3.00	3.50	B		Brown slightly sandy CLAY.	40		Tested at 11.8% mc
ATK-CP-12	12	3.00	3.50	B		Brown slightly sandy CLAY.	54		Tested at 9.8% mc
ATK-CP-12	19	5.00	5.45	UT	1	Reddish brown mottled grey slightly gravelly CLAY.	90		
ATK-CP-13A	4	0.50	0.80	B		Brown slightly sandy CLAY.	48		Tested at 34.8% mc
ATK-CP-13A	4	0.50	0.80	B		Brown slightly sandy CLAY.	52		Tested at 32% mc
ATK-CP-13A	4	0.50	0.80	B		Brown slightly sandy CLAY.	56		Tested at 29.4% mc
ATK-CP-13A	4	0.50	0.80	B		Brown slightly sandy CLAY.	60		Tested at 27.1% mc
ATK-CP-13A	4	0.50	0.80	B		Brown slightly sandy CLAY.	62		Tested at 24.1% mc
ATK-CP-13A	12	2.00	2.50	B		Brown slightly gravelly sandy CLAY.	88		tested at 13.1% mc
ATK-CP-13A	12	2.00	2.50	B		Brown slightly gravelly sandy CLAY.	80		tested at 17.3% mc
ATK-CP-13A	12	2.00	2.50	B		Brown slightly gravelly sandy CLAY.	66		tested at 18.% mc
ATK-CP-13A	12	2.00	2.50	B		Brown slightly gravelly sandy CLAY.	54		tested at 12.3% mc
ATK-CP-13A	12	2.00	2.50	B		Brown slightly gravelly sandy CLAY.	42		tested at 10% mc
ATK-CP-13A	24	5.00	5.50	B		Brown slightly sandy CLAY.	28		Tested at 27.6% mc
ATK-CP-13A	24	5.00	5.50	B		Brown slightly sandy CLAY.	20		Tested at 23.2% mc
ATK-CP-13A	24	5.00	5.50	B		Brown slightly sandy CLAY.	34		Tested at 21.3% mc
ATK-CP-13A	24	5.00	5.50	B		Brown slightly sandy CLAY.	60		Tested at 17.8% mc
ATK-CP-13A	24	5.00	5.50	B		Brown slightly sandy CLAY.	72		Tested at 16.9% mc
ATK-CP-13A	29	6.50	7.00	B		Brown slightly sandy CLAY.	30		Tested at 27.4% mc
ATK-CP-13A	29	6.50	7.00	B		Brown slightly sandy CLAY.	38		Tested at 18.5% mc

Notes : 1 Tests carried out in accordance with Manufacturers Instructions

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Shear Strength by Pilcon Hand method - Summary of Results

Hole No.	Sample				Spec ref	Soil Description	Undrained shear strength kPa	Residual shear strength kPa	Remarks
	No.	Depth (m)		type					
		from	to						
ATK-CP-13A	29	6.50	7.00	B		Brown slightly sandy CLAY.	46		Tested at 22.4% mc
ATK-CP-13A	29	6.50	7.00	B		Brown slightly sandy CLAY.	58		Tested at 16.6% mc
ATK-CP-13A	29	6.50	7.00	B		Brown slightly sandy CLAY.	64		Tested at 13.9% mc
ATK-CP-14	3	0.50	1.00	B		Brown slightly sandy CLAY.	54		Tested at 13.4% mc
ATK-CP-14	3	0.50	1.00	B		Brown slightly sandy CLAY.	50		Tested at 14.7% mc
ATK-CP-14	3	0.50	1.00	B		Brown slightly sandy CLAY.	46		Tested at 17.3% mc
ATK-CP-14	3	0.50	1.00	B		Brown slightly sandy CLAY.	40		Tested at 19.8% mc
ATK-CP-14	3	0.50	1.00	B		Brown slightly sandy CLAY.	28		Tested at 21.3% mc
ATK-CP-14	9	2.50	3.00	B		Brown slightly sandy CLAY.	18		Tested at 32.5% mc
ATK-CP-14	9	2.50	3.00	B		Brown slightly sandy CLAY.	26		Tested at 29.1% mc
ATK-CP-14	9	2.50	3.00	B		Brown slightly sandy CLAY.	38		Tested at 26.5% mc
ATK-CP-14	9	2.50	3.00	B		Brown slightly sandy CLAY.	44		Tested at 21.4% mc
ATK-CP-14	9	2.50	3.00	B		Brown slightly sandy CLAY.	62		Tested at 22.9% mc
ATK-CP-15	4	0.50	0.80	B	1	Brown slightly sandy CLAY.	34		
ATK-CP-15	11	2.00	2.50	B		Grey and brown slightly sandy CLAY.	74		tested at 14% mc
ATK-CP-15	11	2.00	2.50	B		Grey and brown slightly sandy CLAY.	70		tested at 16% mc
ATK-CP-15	11	2.00	2.50	B		Grey and brown slightly sandy CLAY.	63		tested at 18.9% mc
ATK-CP-15	11	2.00	2.50	B		Grey and brown slightly sandy CLAY.	54		tested at 20.1% mc
ATK-CP-15	11	2.00	2.50	B		Grey and brown slightly sandy CLAY.	46		tested at 22.8% mc
ATK-CP-15	26	6.00	6.50	B		Dark greyish brown slightly sandy CLAY.	48		tested at 16.7%mc
ATK-CP-15	26	6.00	6.50	B		Dark greyish brown slightly sandy CLAY.	40		tested at 17.5% mc
ATK-CP-15	26	6.00	6.50	B		Dark greyish brown slightly sandy CLAY.	36		tested at 21.9% mc
ATK-CP-15	26	6.00	6.50	B		Dark greyish brown slightly sandy CLAY.	30		tested at 19.8% mc
ATK-CP-15	26	6.00	6.50	B		Dark greyish brown slightly sandy CLAY.	26		tested at 24.4% mc

Notes : 1 Tests carried out in accordance with Manufacturers Instructions

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Project Name HAVANT THICKET WATER STORAGE

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Shear Strength by Pilcon Hand method - Summary of Results

Hole No.	Sample				Spec ref	Soil Description	Undrained shear strength kPa	Residual shear strength kPa	Remarks
	No.	Depth (m)		type					
		from	to						
ATK-CP-16	4	2.50	3.00	B		Brown slightly sandy CLAY.	68		Tested at 20% mc
ATK-CP-16	4	2.50	3.00	B		Brown slightly sandy CLAY.	64		Tested at 17.7% mc
ATK-CP-16	4	2.50	3.00	B		Brown slightly sandy CLAY.	60		Tested at 16% mc
ATK-CP-16	4	2.50	3.00	B		Brown slightly sandy CLAY.	50		Tested at 14% mc
ATK-CP-16	4	2.50	3.00	B		Brown slightly sandy CLAY.	42		Tested at 11.1% mc
ATK-CP-16	8	3.50	4.00	B	1	Brown slightly sandy CLAY.	32		
ATK-CP-16	16	5.50	6.00	B	1	Brown slightly sandy CLAY.	132.7		
ATK-CP-16	23	7.50	8.00	B		Brownish red mottled grey slightly sandy CLAY.	66		tested at 19.28%
ATK-CP-16	23	7.50	8.00	B		Brownish red mottled grey slightly sandy CLAY.	60		tested at 18.78% mc
ATK-CP-16	23	7.50	8.00	B		Brownish red mottled grey slightly sandy CLAY.	52		tested at 15.74% mc
ATK-CP-16	23	7.50	8.00	B		Brownish red mottled grey slightly sandy CLAY.	50		tested at 18.5% mc
ATK-CP-16	23	7.50	8.00	B		Brownish red mottled grey slightly sandy CLAY.	46		tested at 12.1% mc
ATK-TP-01	4	0.50	0.60	B		Brown slightly sandy CLAY.	22		tested at 15% mc
ATK-TP-01	4	0.50	0.60	B		Brown slightly sandy CLAY.	28		tested at 18.4% mc
ATK-TP-01	4	0.50	0.60	B		Brown slightly sandy CLAY.	36		tested at 19.8% mc
ATK-TP-01	4	0.50	0.60	B		Brown slightly sandy CLAY.	50		tested at 23.5% mc
ATK-TP-01	4	0.50	0.60	B		Brown slightly sandy CLAY.	60		tested at 27.6% mc
ATK-TP-01	8	1.00	1.20	B	1	Brown slightly sandy silty CLAY.	34.7		
ATK-TP-01	12	2.80	2.90	B		Brown slightly sandy CLAY.	26		Tested at 33.8% mc
ATK-TP-01	12	2.80	2.90	B		Brown slightly sandy CLAY.	36		Tested at 30.3% mc
ATK-TP-01	12	2.80	2.90	B		Brown slightly sandy CLAY.	52		Tested at 28.6% mc
ATK-TP-01	12	2.80	2.90	B		Brown slightly sandy CLAY.	66		Tested at 37.9% mc
ATK-TP-01	12	2.80	2.90	B		Brown slightly sandy CLAY.	74		Tested at 24.3% mc
ATK-TP-01	14	3.00	3.10	B		Brown slightly sandy CLAY.	16		Tested at 30.3% mc

Notes : 1 Tests carried out in accordance with Manufacturers Instructions

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Shear Strength by Pilcon Hand method - Summary of Results

Hole No.	Sample				Spec ref	Soil Description	Undrained shear strength kPa	Residual shear strength kPa	Remarks
	No.	Depth (m)		type					
		from	to						
ATK-TP-01	14	3.00	3.10	B		Brown slightly sandy CLAY.	34		Tested at 26.6% mc
ATK-TP-01	14	3.00	3.10	B		Brown slightly sandy CLAY.	26		Tested at 27.4% mc
ATK-TP-01	14	3.00	3.10	B		Brown slightly sandy CLAY.	44		Tested at 24.9% mc
ATK-TP-01	14	3.00	3.10	B		Brown slightly sandy CLAY.	60		Tested at 22.4% mc
ATK-TP-02	6	1.30	1.40	B		Brown slightly sandy slightly gravelly CLAY.	24		tested at 32.6% mc
ATK-TP-02	6	1.30	1.40	B		Brown slightly sandy slightly gravelly CLAY.	32		tested at 29.2% mc
ATK-TP-02	6	1.30	1.40	B		Brown slightly sandy slightly gravelly CLAY.	46		tested at 27.4% mc
ATK-TP-02	6	1.30	1.40	B		Brown slightly sandy slightly gravelly CLAY.	52		tested at 24.8% mc
ATK-TP-02	6	1.30	1.40	B		Brown slightly sandy slightly gravelly CLAY.	66		tested at 21.15 mc
ATK-TP-02	8	2.20	2.40	B		Brown slightly sandy CLAY.	41		Tested at 27.7% mc
ATK-TP-02	8	2.20	2.40	B		Brown slightly sandy CLAY.	52		Tested at 22.5% mc
ATK-TP-02	8	2.20	2.40	B		Brown slightly sandy CLAY.	74		Tested at 20% mc
ATK-TP-02	8	2.20	2.40	B		Brown slightly sandy CLAY.	77		Tested at 18% mc
ATK-TP-02	8	2.20	2.40	B		Brown slightly sandy CLAY.	58		Tested at 24% mc
ATK-TP-03	4	0.50	0.60	B		Brown slightly sandy slightly gravelly CLAY.	28		
ATK-TP-03	6	0.90	1.00	B	1	Brown slightly sandy CLAY.	30.7		
ATK-TP-03	9	1.60	1.70	B		Brown slightly sandy slightly gravelly CLAY.	30		Tested at 29.8% mc
ATK-TP-03	9	1.60	1.70	B		Brown slightly sandy slightly gravelly CLAY.	36		Tested at 26.3% mc
ATK-TP-03	9	1.60	1.70	B		Brown slightly sandy slightly gravelly CLAY.	42		Tested at 22.5% mc
ATK-TP-03	9	1.60	1.70	B		Brown slightly sandy slightly gravelly CLAY.	54		Tested at 32.3% mc
ATK-TP-03	9	1.60	1.70	B		Brown slightly sandy slightly gravelly CLAY.	64		Tested at 34.4% mc
ATK-TP-03	11	2.20	2.40	B	1	Brown slightly sandy CLAY.	38.7		
ATK-TP-04	3	0.30	0.40	B		Brown slightly sandy slightly gravelly CLAY.	6		
ATK-TP-04	5	1.00	1.20	B		Brown sandy CLAY.	48		Tested at 26.5% mc

Notes : 1 Tests carried out in accordance with Manufacturers Instructions

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Shear Strength by Pilcon Hand method - Summary of Results

Hole No.	Sample				Spec ref	Soil Description	Undrained shear strength kPa	Residual shear strength kPa	Remarks
	No.	Depth (m)		type					
		from	to						
ATK-TP-04	5	1.00	1.20	B		Brown sandy CLAY.	56		Tested at 24% mc
ATK-TP-04	5	1.00	1.20	B		Brown sandy CLAY.	68		Tested at 20% mc
ATK-TP-04	5	1.00	1.20	B		Brown sandy CLAY.	58		Tested at 22% mc
ATK-TP-04	5	1.00	1.20	B		Brown sandy CLAY.	74		Tested at 18% mc
ATK-TP-04	8	1.40	1.50	B	1	Brown slightly sandy CLAY.	46		
ATK-TP-04	10	1.80	2.00	B		Brown slightly sandy slightly gravelly CLAY.	53		Tested at 24.5% mc
ATK-TP-04	10	1.80	2.00	B		Brown slightly sandy slightly gravelly CLAY.	70		Tested at 23.4% mc
ATK-TP-04	10	1.80	2.00	B		Brown slightly sandy slightly gravelly CLAY.	86		Tested at 20.3% mc
ATK-TP-04	10	1.80	2.00	B		Brown slightly sandy slightly gravelly CLAY.	104		Tested at 28.2% mc
ATK-TP-04	10	1.80	2.00	B		Brown slightly sandy slightly gravelly CLAY.	130		Tested at 25.4% mc
ATK-TP-04	12	3.00	3.10	B		Reddish brown mottled grey slightly sandy CLAY.	44		Tested at 23.2% mc
ATK-TP-04	12	3.00	3.10	B		Reddish brown mottled grey slightly sandy CLAY.	50		Tested at 20.4% mc
ATK-TP-04	12	3.00	3.10	B		Reddish brown mottled grey slightly sandy CLAY.	36		Tested at 25.8% mc
ATK-TP-04	12	3.00	3.10	B		Reddish brown mottled grey slightly sandy CLAY.	50		Tested at 19.83% mc
ATK-TP-04	12	3.00	3.10	B		Reddish brown mottled grey slightly sandy CLAY.	54		Tested at 18.08% mc
ATK-TP-04	12	3.00	3.10	B		Reddish brown mottled grey slightly sandy CLAY.	54		Tested at 18.1% mc
ATK-TP-05	3	0.40	0.50	B		Brown slightly gravelly sandy silty CLAY.	24		Tested at 25.5% mc
ATK-TP-05	3	0.40	0.50	B		Brown slightly gravelly sandy silty CLAY.	30		Tested at 20.6% mc
ATK-TP-05	3	0.40	0.50	B		Brown slightly gravelly sandy silty CLAY.	42		Tested at 22.8% mc
ATK-TP-05	3	0.40	0.50	B		Brown slightly gravelly sandy silty CLAY.	54		Tested at 17.5% mc
ATK-TP-05	3	0.40	0.50	B		Brown slightly gravelly sandy silty CLAY.	60		Tested at 15.3% mc
ATK-TP-05	6	0.90	1.00	B		Brown clayey SAND.	20		Tested at 27.8% mc
ATK-TP-05	6	0.90	1.00	B		Brown clayey SAND.	38		Tested at 25% mc
ATK-TP-05	6	0.90	1.00	B		Brown clayey SAND.	46		Tested at 23.4% mc

Notes : 1 Tests carried out in accordance with Manufacturers Instructions

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Shear Strength by Pilcon Hand method - Summary of Results

Hole No.	Sample				Spec ref	Soil Description	Undrained shear strength kPa	Residual shear strength kPa	Remarks
	No.	Depth (m)		type					
		from	to						
ATK-TP-05	6	0.90	1.00	B		Brown clayey SAND.	60		Tested at 21.2% mc
ATK-TP-05	6	0.90	1.00	B		Brown clayey SAND.	68		Tested at 18.9% mc
ATK-TP-06	4	0.30	0.80	B		Brown slightly sandy silty CLAY.	8		Tested at 33.4% mc
ATK-TP-06	4	0.30	0.80	B		Brown slightly sandy silty CLAY.	14		Tested at 29.8% mc
ATK-TP-06	4	0.30	0.80	B		Brown slightly sandy silty CLAY.	16		Tested at 28% mc
ATK-TP-06	4	0.30	0.80	B		Brown slightly sandy silty CLAY.	28		Tested at 24.5% mc
ATK-TP-06	4	0.30	0.80	B		Brown slightly sandy silty CLAY.	30		Tested at 20.6% mc
ATK-TP-06	8	0.90	1.20	B		Brown slightly sandy CLAY.	14		tested at 33& mc
ATK-TP-06	8	0.90	1.20	B		Brown slightly sandy CLAY.	16		tested at 30.2% mc
ATK-TP-06	8	0.90	1.20	B		Brown slightly sandy CLAY.	22		Tested at 28.6% mc
ATK-TP-06	8	0.90	1.20	B		Brown slightly sandy CLAY.	28		Tested at 26.7% mc
ATK-TP-06	8	0.90	1.20	B		Brown slightly sandy CLAY.	34		Tested at 24.5% mc
ATK-TP-06	11	2.00	2.40	B		Brown slightly sandy CLAY.	16		Tested at 31.7% mc
ATK-TP-06	11	2.00	2.40	B		Brown slightly sandy CLAY.	20		Tested at 29.65 mc
ATK-TP-06	11	2.00	2.40	B		Brown slightly sandy CLAY.	36		Tested at 20.3% mc
ATK-TP-06	11	2.00	2.40	B		Brown slightly sandy CLAY.	30		Tested at 22.3% mc
ATK-TP-06	11	2.00	2.40	B		Brown slightly sandy CLAY.	48		Tested at 25.6% mc
ATK-TP-06	13	3.00	3.50	B		Brown slightly sandy CLAY.	26		tested at 27.65 mc
ATK-TP-06	13	3.00	3.50	B		Brown slightly sandy CLAY.	36		tested at 23.7% mc
ATK-TP-06	13	3.00	3.50	B		Brown slightly sandy CLAY.	42		tested at 25.5% mc
ATK-TP-06	13	3.00	3.50	B		Brown slightly sandy CLAY.	50		Tested at 20.4% mc
ATK-TP-06	13	3.00	3.50	B		Brown slightly sandy CLAY.	62		tested at 18.8% mc
ATK-TP-07	9	1.60	1.70	B		Brown clayey SAND.	18		Tested at 30% mc
ATK-TP-07	9	1.60	1.70	B		Brown clayey SAND.	30		Tested at 25.4% mc

Notes : 1 Tests carried out in accordance with Manufacturers Instructions

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Shear Strength by Pilcon Hand method - Summary of Results

Hole No.	Sample				Spec ref	Soil Description	Undrained shear strength kPa	Residual shear strength kPa	Remarks
	No.	Depth (m)		type					
		from	to						
ATK-TP-07	9	1.60	1.70	B		Brown clayey SAND.	42		Tested at 21.2% mc
ATK-TP-07	9	1.60	1.70	B		Brown clayey SAND.	60		Tested at 18.5% mc
ATK-TP-07	9	1.60	1.70	B		Brown clayey SAND.	78		Tested at 16% mc
ATK-TP-08	8	0.90	1.00	B		Brown slightly sandy gravelly CLAY with one cobble.	26		Tested at 26.8% mc
ATK-TP-08	8	0.90	1.00	B		Brown slightly sandy gravelly CLAY with one cobble.	30		Tested at 24.7% mc
ATK-TP-08	8	0.90	1.00	B		Brown slightly sandy gravelly CLAY with one cobble.	20		Tested at 22% mc
ATK-TP-08	8	0.90	1.00	B		Brown slightly sandy gravelly CLAY with one cobble.	16		Tested at 20% mc
ATK-TP-08	8	0.90	1.00	B		Brown slightly sandy gravelly CLAY with one cobble.	10		Tested at 18% mc
ATK-TPM-02	2	0.40	0.50	B		Brown slightly sandy silty CLAY.	16		Tested at 25.4% mc
ATK-TPM-02	2	0.40	0.50	B		Brown slightly sandy silty CLAY.	22		Tested at 23% mc
ATK-TPM-02	2	0.40	0.50	B		Brown slightly sandy silty CLAY.	30		Tested at 23.8% mc
ATK-TPM-02	2	0.40	0.50	B		Brown slightly sandy silty CLAY.	36		Tested at 20.4% mc
ATK-TPM-02	2	0.40	0.50	B		Brown slightly sandy silty CLAY.	40		Tested at 17.8% mc
ATK-TPM-02	9	1.60	1.70	B		Brown slightly sandy CLAY.	26		Tested at 29.4% mc
ATK-TPM-02	9	1.60	1.70	B		Brown slightly sandy CLAY.	34		Tested at 26.7% mc
ATK-TPM-02	9	1.60	1.70	B		Brown slightly sandy CLAY.	46		Tested at 25.9% mc
ATK-TPM-02	9	1.60	1.70	B		Brown slightly sandy CLAY.	52		Tested at 20.6% mc
ATK-TPM-02	9	1.60	1.70	B		Brown slightly sandy CLAY.	66		Tested at 15% mc
ATK-TPM-03	3A	0.40	0.50	B	1	Brown slightly sandy CLAY.	32		
ATK-TPM-03	6	1.60	1.70	B		Brown slightly sandy slightly gravelly CLAY.	20		Tested at 25.5% mc
ATK-TPM-03	6	1.60	1.70	B		Brown slightly sandy slightly gravelly CLAY.	80		Tested at 23% mc
ATK-TPM-03	6	1.60	1.70	B		Brown slightly sandy slightly gravelly CLAY.	94		Tested at 20.8% mc
ATK-TPM-03	6	1.60	1.70	B		Brown slightly sandy slightly gravelly CLAY.	107		Tested at 27.7% mc
ATK-TPM-03	6	1.60	1.70	B		Brown slightly sandy slightly gravelly CLAY.	119		Tested at 30.1% mc

Notes : 1 Tests carried out in accordance with Manufacturers Instructions

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Shear Strength by Pilcon Hand method - Summary of Results

Hole No.	Sample				Spec ref	Soil Description	Undrained shear strength kPa	Residual shear strength kPa	Remarks
	No.	Depth (m)		type					
		from	to						
ATK-TPM-03	12	3.60	3.70	B		Brown slightly sandy CLAY.	18		tested at 29.1% mc
ATK-TPM-03	12	3.60	3.70	B		Brown slightly sandy CLAY.	28		tested at 26.4% mc
ATK-TPM-03	12	3.60	3.70	B		Brown slightly sandy CLAY.	36		tested at 25.3% mc
ATK-TPM-03	12	3.60	3.70	B		Brown slightly sandy CLAY.	48		tested at 21.2% mc
ATK-TPM-03	12	3.60	3.70	B		Brown slightly sandy CLAY.	62		tested at 20.7% mc
ATK-TPM-04	4	0.50	0.60	B		Brown CLAY.	28		Tested at 26% mc
ATK-TPM-04	4	0.50	0.60	B		Brown CLAY.	58		Tested at -4% mc
ATK-TPM-04	4	0.50	0.60	B		Brown CLAY.	38		Tested at -2% mc
ATK-TPM-04	4	0.50	0.60	B		Brown CLAY.	66		Tested at 28% mc
ATK-TPM-04	4	0.50	0.60	B		Brown CLAY.	74		Tested at 26% mc
ATK-TPM-04	7	1.50	1.60	B			46.7		
ATK-TPM-05	4	0.70	1.00	B		Brown slightly sandy CLAY.	34		tested at 41.3% mc
ATK-TPM-05	4	0.70	1.00	B		Brown slightly sandy CLAY.	40		tested at 38.8% mc
ATK-TPM-05	4	0.70	1.00	B		Brown slightly sandy CLAY.	44		tested at 36.7% mc
ATK-TPM-05	4	0.70	1.00	B		Brown slightly sandy CLAY.	56		tested at 34.7% mc
ATK-TPM-05	4	0.70	1.00	B		Brown slightly sandy CLAY.	68		tested at 32.6% mc
ATK-TPM-05	8	1.60	1.70	B	1	Brown slightly sandy slightly gravelly CLAY.	52.7		
ATK-TPM-05	10	2.00	2.20	B		Brown slightly sandy slightly gravelly CLAY.	32		Tested at 29.6% mc
ATK-TPM-05	10	2.00	2.20	B		Brown slightly sandy slightly gravelly CLAY.	52		Tested at 26.2% mc
ATK-TPM-05	10	2.00	2.20	B		Brown slightly sandy slightly gravelly CLAY.	82		Tested at 24.6% mc
ATK-TPM-05	10	2.00	2.20	B		Brown slightly sandy slightly gravelly CLAY.	140		Tested at 20% mc
ATK-TPM-05	10	2.00	2.20	B		Brown slightly sandy slightly gravelly CLAY.	140		Tested at 18% mc
ATK-TPM-05	10	2.00	2.20	B		Brown slightly sandy slightly gravelly CLAY.	110		Tested at 22% mc
ATK-TPM-05	12	2.90	3.00	B	1	Brown slightly sandy slightly gravelly CLAY.	56		

Notes : 1 Tests carried out in accordance with Manufacturers Instructions

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Shear Strength by Pilcon Hand method - Summary of Results

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Consolidated Undrained Triaxial Compression test with Measurement of Pore Water Pressure (BS1377 : Part 8 : 1990)

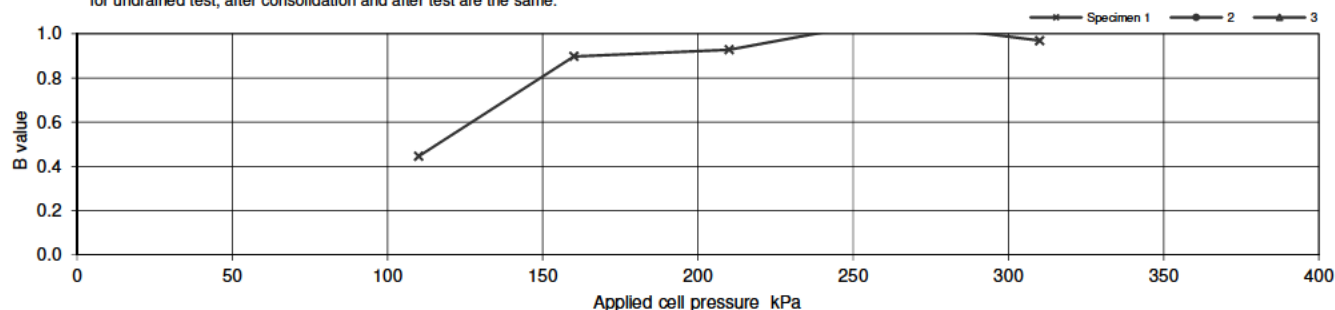
Project No	A9031-19	Sample Details:	Hole No	ATK-CP-01
Project Name	HAVANT THICKET WATER STORAGE		Depth (m BGL)	6.00
			No	26
			Type	UT
			ID	
			Spec Ref	

Specimen Details		1	2	3
Initial	Length mm	203.01		
	Diameter mm	103.65		
	Bulk Density Mg/m³	2.03		
	Water Content %	25		
	Dry density Mg/m³	1.62		
After consolidation	Length mm	203.37		
	Diameter mm	103.82		
	Bulk Density* Mg/m³	2.03		
	Water Content* %	26		
	Dry density* Mg/m³	1.61		

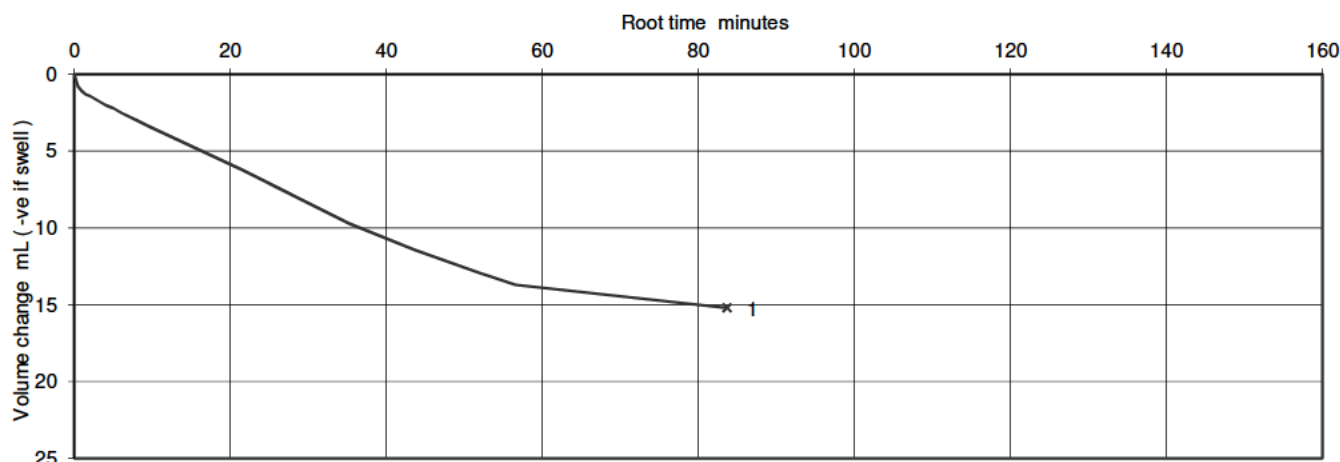
Soil Description	Firm greyish brown slightly sandy silty CLAY
Specimen Type /Preparation	UNDISTURBED

Saturation Details		Method of Saturation		
		Increments of cell and back pressure		
Cell pressure increments	kPa	50		
Differential Pressure	kPa	10		
Final Cell Pressure	kPa	310		
Final pore water pressure	kPa	272.2		
Final B Value		0.97		

* for undrained test, after consolidation and after test are the same.



Consolidation Details	Drainage Conditions		From one end			
	Specimen No.		1	2	3	
	Cell Pressure applied		360			kPa
	Back Pressure applied		300			kPa
	Effective Pressure		60			kPa
	Pore pressure at start of consolidation		321			kPa
	Pore pressure at end of consolidation		300			kPa
	Pore pressure dissipation at end of consolidation		100			%
Consolidation parameters (see note to BS1377 : pt 8, clause 6.3.4)	Coefficient of Consolidation		C _{vi}	6.66		m²/year
	Coefficient of Compressibility		M _{vi}	0.42		m²/MN
	Coefficient of Permeability (calculated)		k _{vi}	8.7E-10		m/s

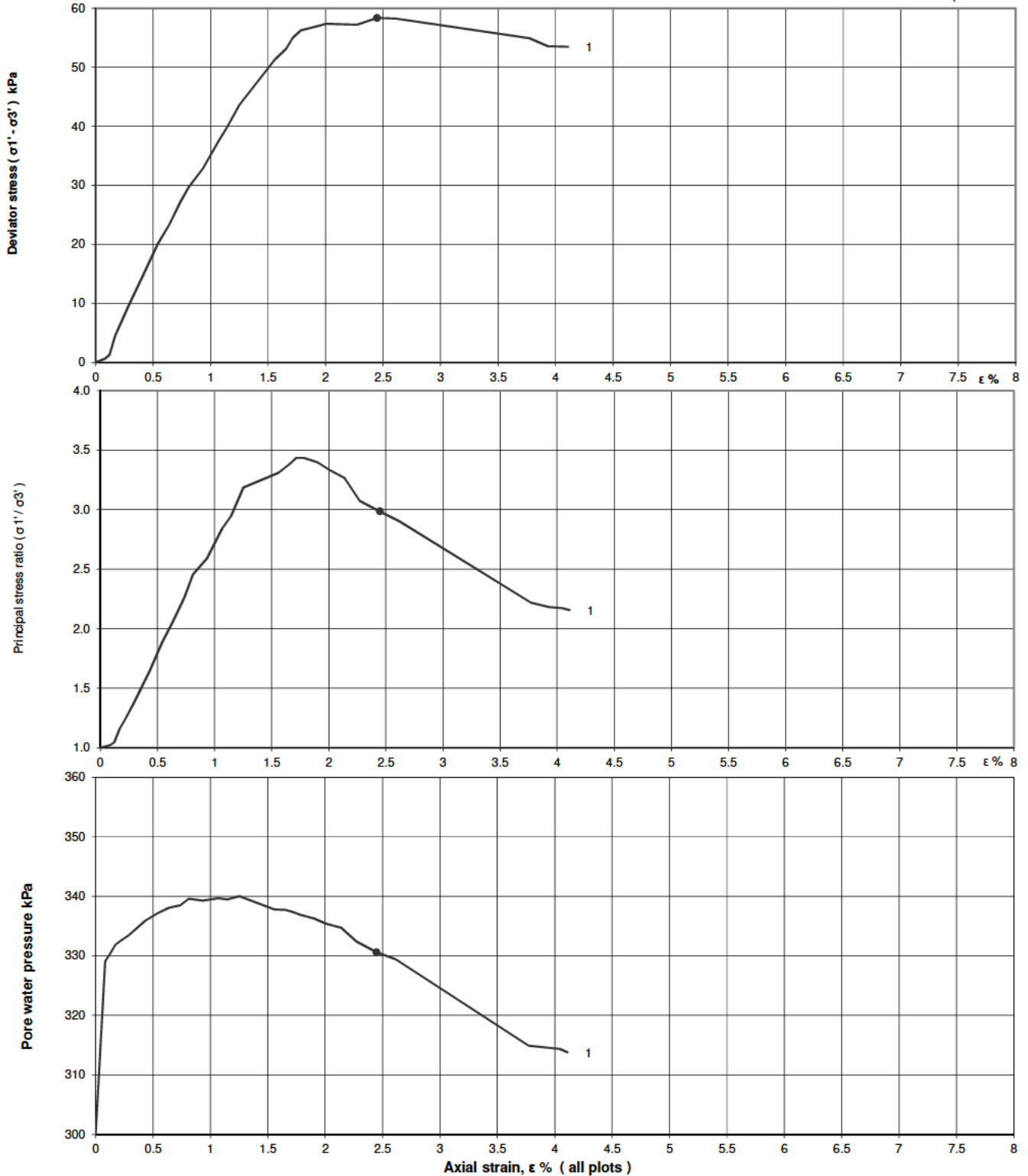


Ref	SLR8.1 Rev 86.0 Feb18			Printed:15/01/2020 09:07	Figure CU sheet 1 of 3
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**Consolidated Undrained Triaxial Compression test with Measurement of Pore Water Pressure
(BS1377 : Part 8 : 1990)**

Project No	A9031-19	Sample Details:	Hole No		ATK-CP-01	
Project Name	HAVANT THICKET WATER STORAGE		Depth (m BGL)		6.00	
			No	26	Type	UT
			ID			
			Spec Ref			

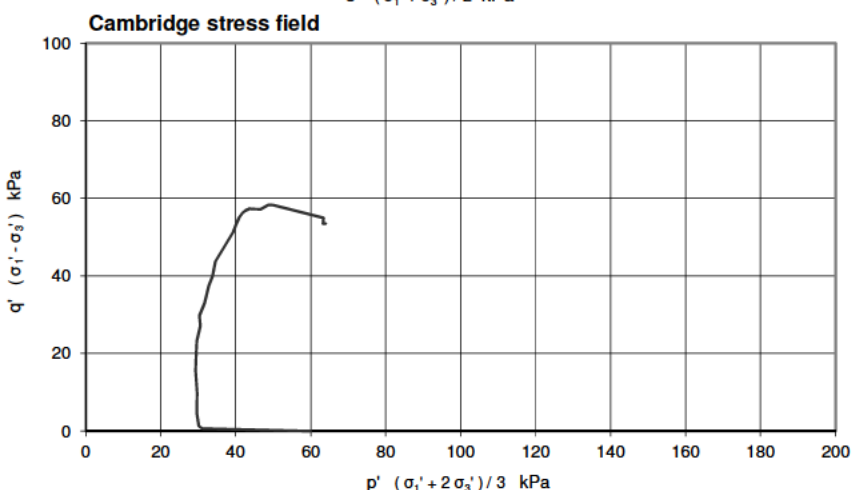
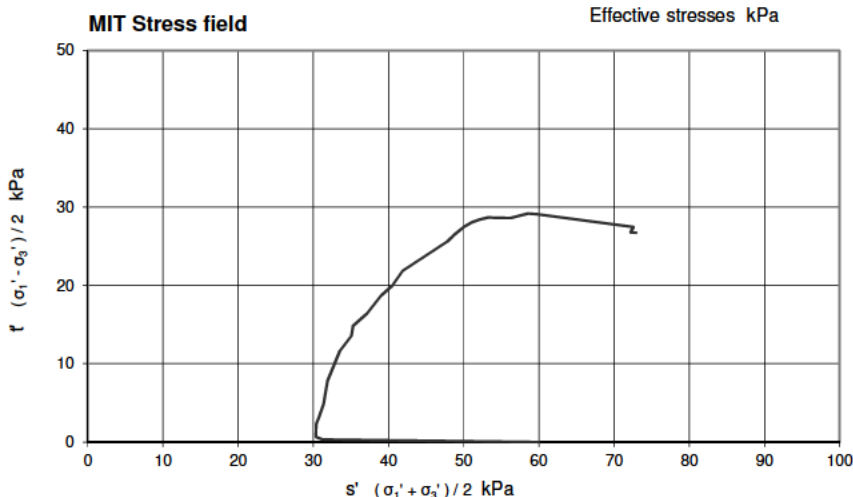
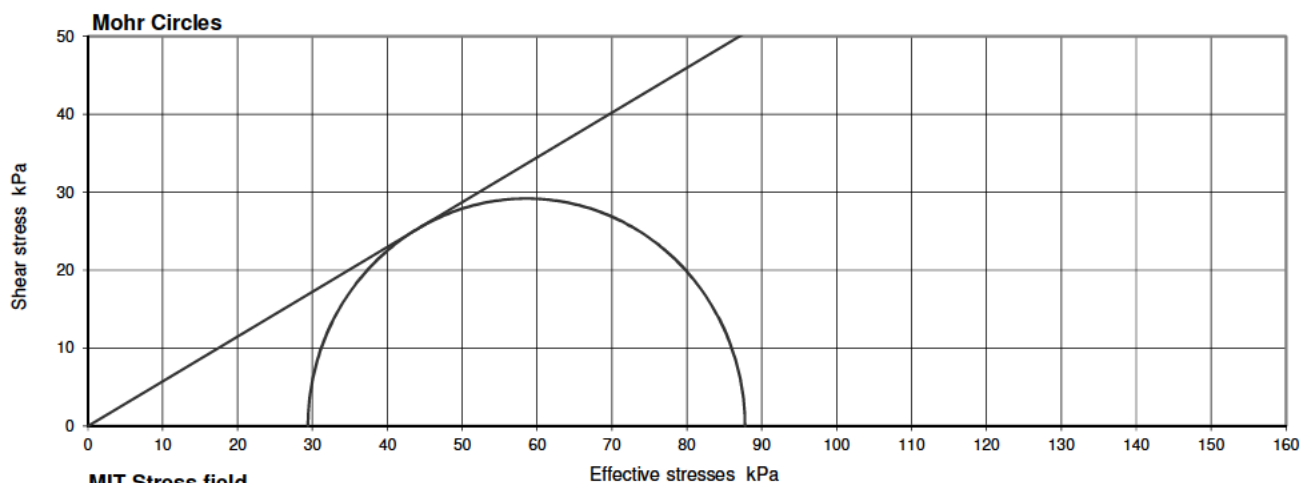
Shearing stages - graphical data



Ref	 SOCOTEC	 UKAS TESTING 1157	Printed:15/01/2020 09:07	Figure
SLR8.1 Rev 86.0 Feb18				CU sheet 2 of 3
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Consolidated Undrained Triaxial Compression test with Measurement of Pore Water Pressure (BS1377 : Part 8 : 1990)

Project No	A9031-19	Sample Details:	Hole No	ATK-CP-01
Project Name	HAVANT THICKET WATER STORAGE		Depth (m BGL)	6.00
			No	26
			Type	UT
			ID	
			Spec Ref	



Compression stages

Specimen	1	2	3
Cell pressure	360		
Initial pwp	300		
Initial σ_3'	60		
Rate of strain	0.40		

Failure conditions

Criterion	Maximum deviator stress		
Axial strain	2.45		%
$(\sigma_1' / \sigma_3')_f$	2.985		
$(\sigma_1' - \sigma_3')_f$	58.4		kPa
u_f	331		kPa
$\sigma_3'_f$	29		kPa
$\sigma_1'_f$	88		kPa
A_f	0.52		
Time to failure	6.1		hrs

Shear Strength Parameters

		Linear regression
c'	kPa	0.0
ϕ'	degrees	29.9
		Manual re-assessment
c'	kPa	-
ϕ'	degrees	-

Mode of failure



Notes : Deviator stresses corrected for area change, and 0.329 mm thick rubber membrane(s)
NO SIDE DRAINS

Consolidated Undrained Triaxial Compression test with Measurement of Pore Water Pressure (BS1377 : Part 8 : 1990)

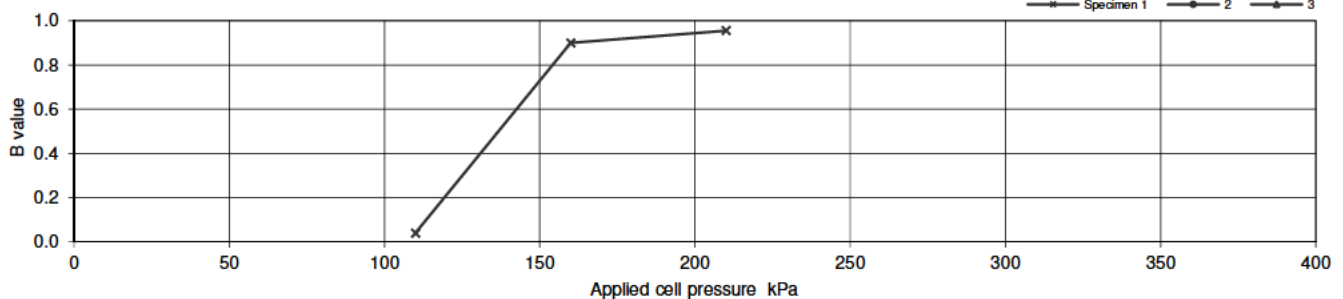
Project No	A9031-19	Sample Details:	Hole No	ATK-CP-02
Project Name	HAVANT THICKET WATER STORAGE		Depth (m BGL)	7.00-7.45
			No	22
			Type	UT
			ID	
			Spec Ref	

Specimen Details		1	2	3
Initial	Length mm	203.30		
	Diameter mm	103.40		
	Bulk Density Mg/m³	2.06		
	Water Content %	24		
	Dry density Mg/m³	1.66		
After consolidation	Length mm	202.32		
	Diameter mm	102.90		
	Bulk Density* Mg/m³	2.08		
	Water Content* %	23		
	Dry density* Mg/m³	1.69		

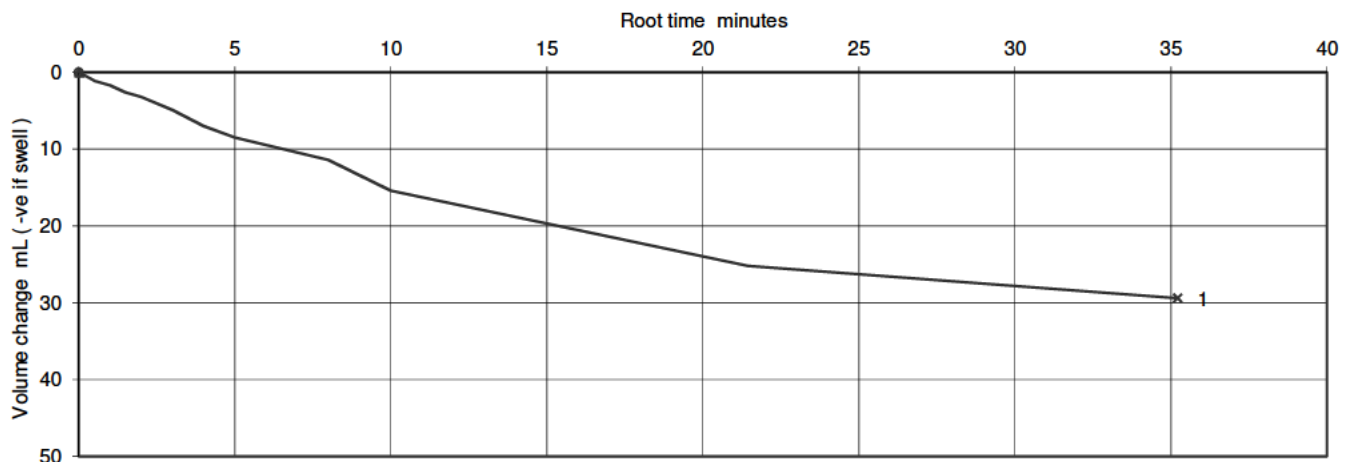
Soil Description	Soft brown slightly sandy silty CLAY
Specimen Type /Preparation	UNDISTURBED

Saturation Details		Method of Saturation		
		Increments of cell and back pressure		
Cell pressure increments	kPa	50		
Differential Pressure	kPa	10		
Final Cell Pressure	kPa	210		
Final pore water pressure	kPa	179.2		
Final B Value		0.96		

* for undrained test, after consolidation and after test are the same.



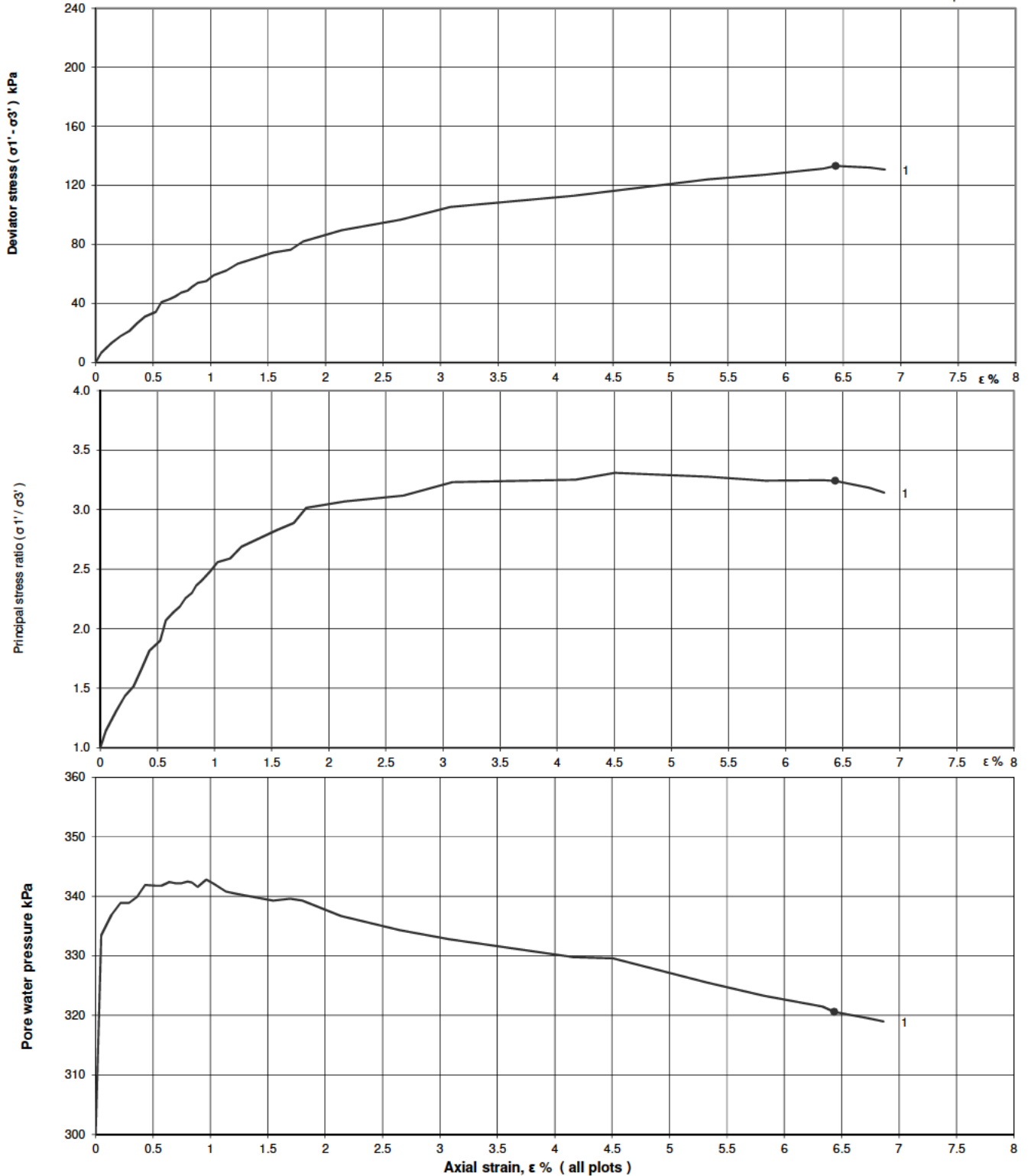
Consolidation Details		From radial boundary and one end			
Consolidation Details	Drainage Conditions				
	Specimen No.	1	2	3	
	Cell Pressure applied	380			kPa
	Back Pressure applied	300			kPa
	Effective Pressure	80			kPa
	Pore pressure at start of consolidation	356			kPa
	Pore pressure at end of consolidation	300			kPa
	Pore pressure dissipation at end of consolidation	100			%
Consolidation parameters (see note to BS1377 : pt 8, clause 6.3.4)	Coefficient of Consolidation	C _{vi}	0.81		m²/year
	Coefficient of Compressibility	M _{vi}	0.31		m²/MN
	Coefficient of Permeability (calculated)	k _{vi}	7.7E-11		m/s



Consolidated Undrained Triaxial Compression test with Measurement of Pore Water Pressure (BS1377 : Part 8 : 1990)

Project No	A9031-19	Sample Details:	Hole No		ATK-CP-02	
Project Name	HAVANT THICKET WATER STORAGE		Depth (m BGL)		7.00-7.45	
			No	22	Type	UT
			ID			
			Spec Ref			

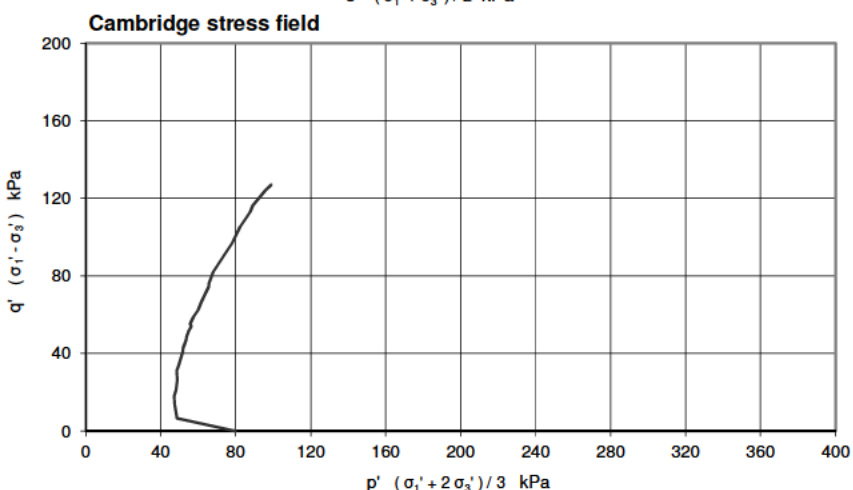
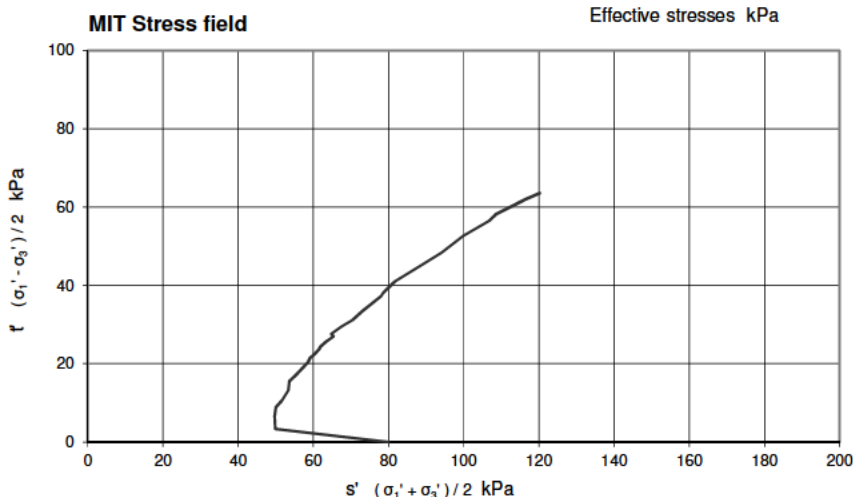
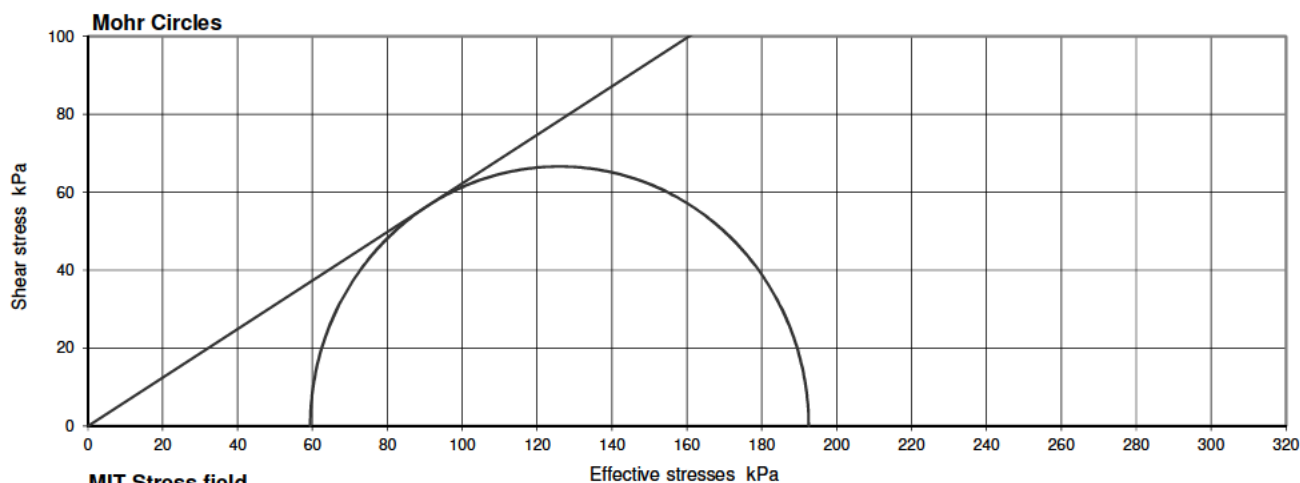
Shearing stages - graphical data



Ref				Figure
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Consolidated Undrained Triaxial Compression test with Measurement of Pore Water Pressure (BS1377 : Part 8 : 1990)

Project No	A9031-19	Sample Details:	Hole No	ATK-CP-02
Project Name	HAVANT THICKET WATER STORAGE		Depth (m BGL)	7.00-7.45
			No	22
			Type	UT
			ID	
			Spec Ref	



Compression stages

Specimen	1	2	3
Cell pressure	380		
Initial pwp	300		
Initial σ_3'	80		
Rate of strain	2.00		

Failure conditions

Criterion	Maximum deviator stress	
Axial strain	6.44	%
$(\sigma_1' / \sigma_3')_f$	3.241	
$(\sigma_1' - \sigma_3')_f$	133.1	kPa
u_f	321	kPa
$\sigma_3'_f$	59	kPa
$\sigma_1'_f$	193	kPa
A_f	0.15	
Time to failure	3.2	hrs

Shear Strength Parameters

		Linear regression
c'	kPa	0.0
ϕ'	degrees	31.9
		Manual re-assessment
c'	kPa	-
ϕ'	degrees	-

Mode of failure



Notes : Deviator stresses corrected for area change, and 0.329 mm thick rubber membrane(s)
NO SIDE DRAINS

**Consolidated Undrained Triaxial Compression test with Measurement of Pore Water Pressure
(BS1377 : Part 8 : 1990)**

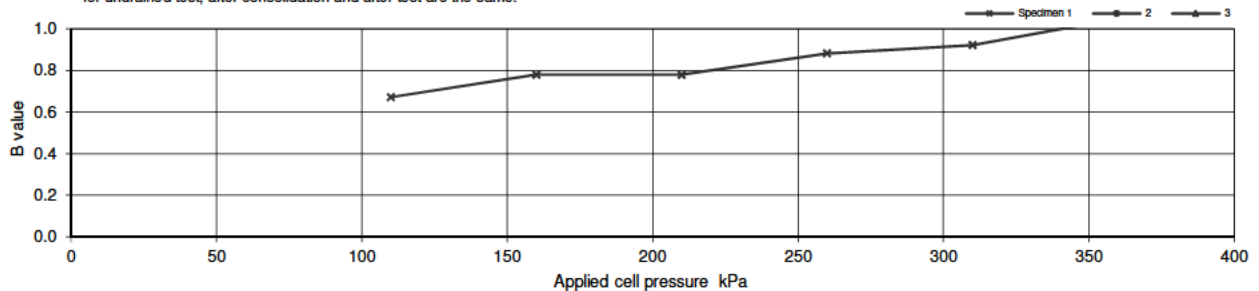
Project No	A9031-19	Sample Details:	Hole No	ATK-CP-03
Project Name	HAVANT THICKET WATER STORAGE		Depth (m BGL)	7.00-7.45
			No	30
			Type	UT
			ID	
			Spec Ref	

Specimen Details		1	2	3
Initial	Length mm	203.29		
	Diameter mm	103.13		
	Bulk Density Mg/m³	1.96		
	Water Content %	30		
	Dry density Mg/m³	1.51		
After consolidation	Length mm	203.36		
	Diameter mm	103.17		
	Bulk Density* Mg/m³	1.97		
	Water Content* %	31		
	Dry density* Mg/m³	1.51		

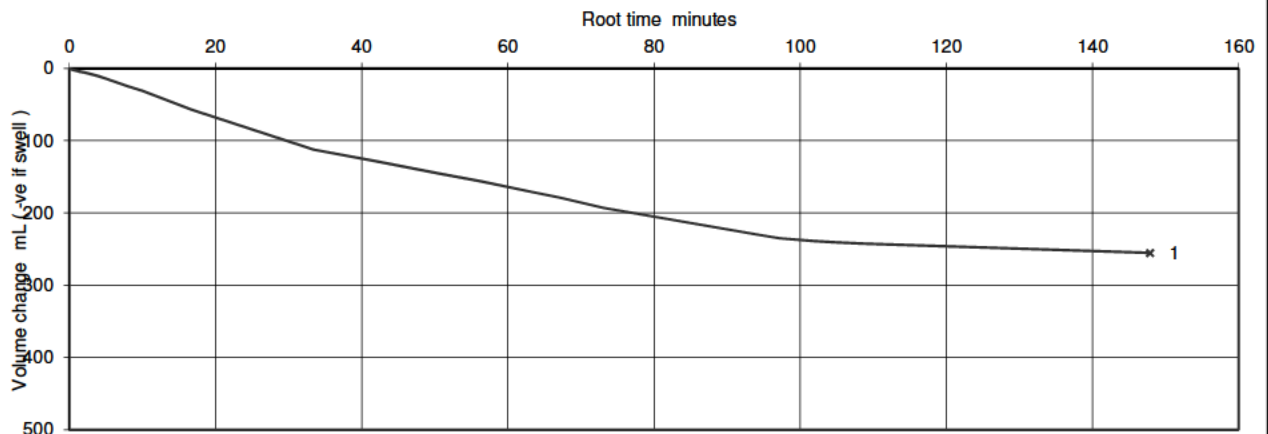
* for undrained test, after consolidation and after test are the same.

Soil Description	Firm brown slightly sandy CLAY.
Specimen Type /Preparation	UNDISTURBED

Saturation Details		Method of Saturation		
		Increments of cell and back pressure		
Cell pressure increments	kPa	50		
Differential Pressure	kPa	10		
Final Cell Pressure	kPa	360		
Final pore water pressure	kPa	347.5		
Final B Value		1.05		



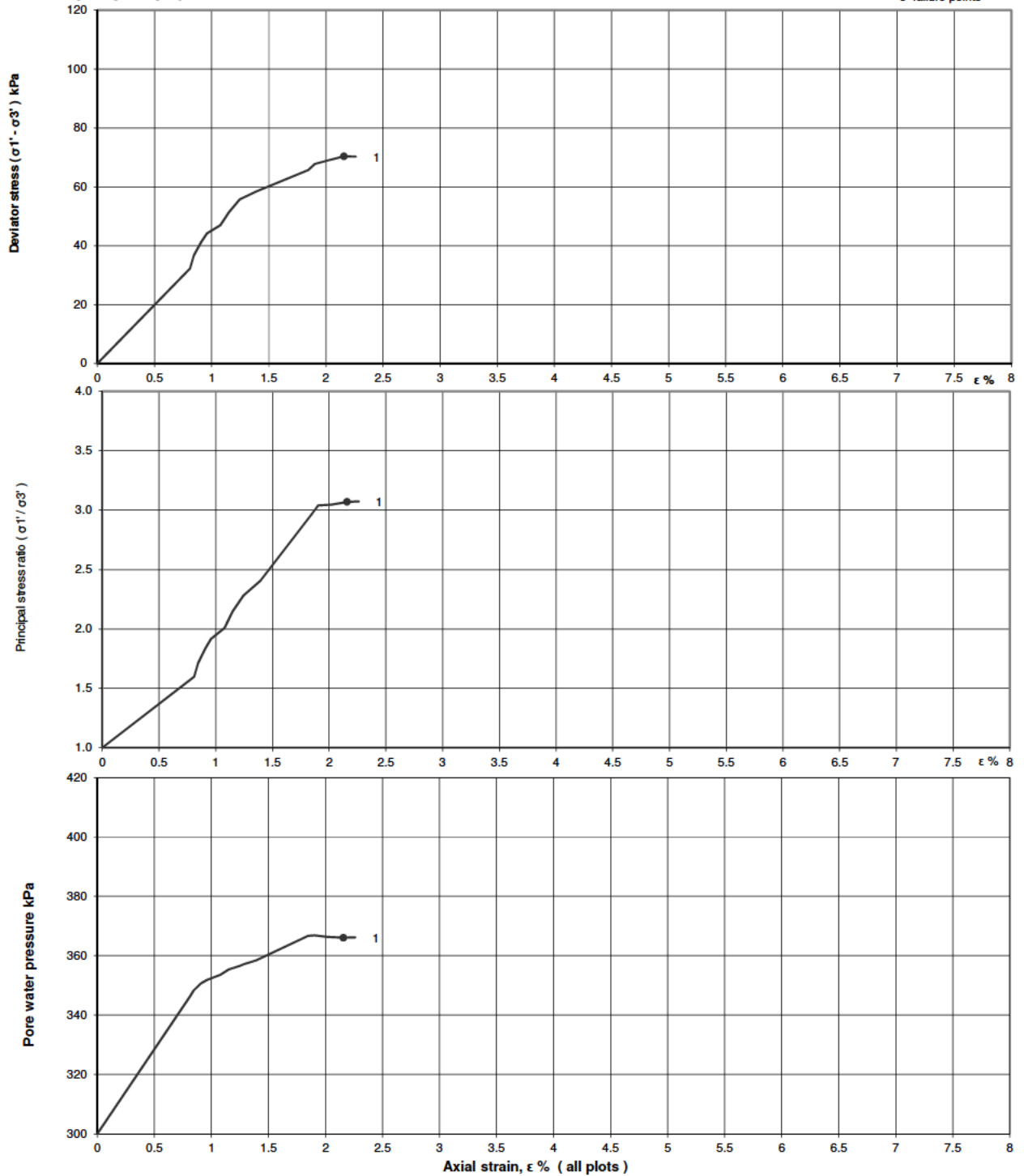
Consolidation Details	Drainage Conditions		From radial boundary and one end			
	Specimen No.		1	2	3	
	Cell Pressure applied		400			kPa
	Back Pressure applied		300			kPa
	Effective Pressure		100			kPa
	Pore pressure at start of consolidation		378			kPa
	Pore pressure at end of consolidation		300			kPa
	Pore pressure dissipation at end of consolidation		100			%
Consolidation parameters (see note to BS1377 : pt 8, clause 6.3.4)	Coefficient of Consolidation		C _{vi}	0.04		m²/year
	Coefficient of Compressibility		M _{vi}	1.66		m²/MN
	Coefficient of Permeability (calculated)		k _{vi}	2.2E-11		m/s



Consolidated Undrained Triaxial Compression test with Measurement of Pore Water Pressure (BS1377 : Part 8 : 1990)

Project No	A9031-19	Sample Details:	Hole No		ATK-CP-03	
Project Name	HAVANT THICKET WATER STORAGE		Depth (m BGL)		7.00-7.45	
			No	30	Type	UT
			ID			
			Spec Ref			

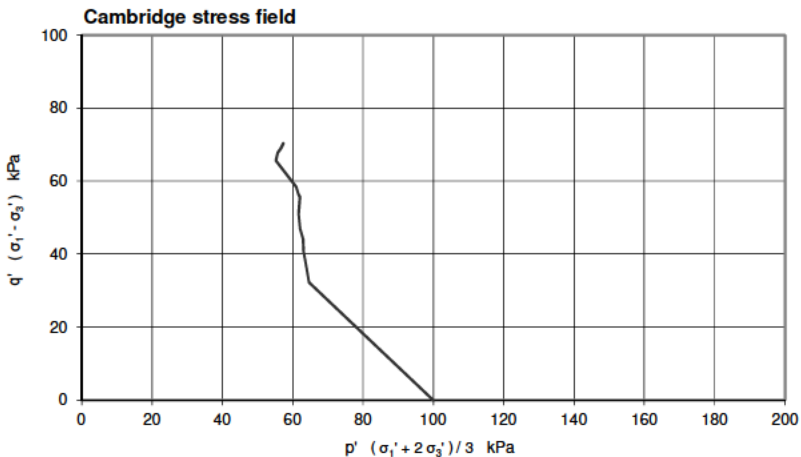
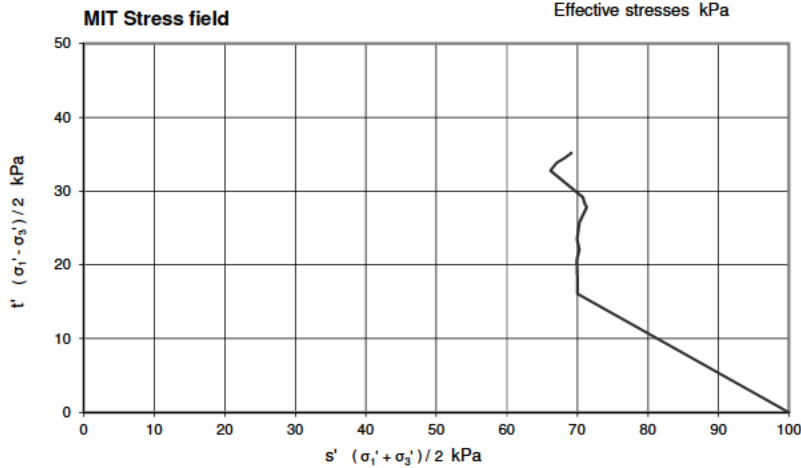
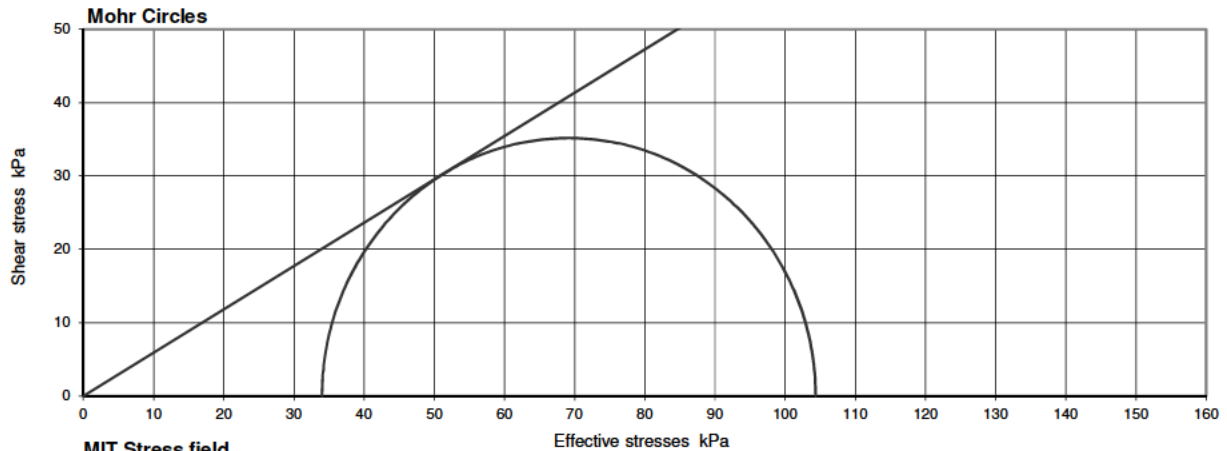
Shearing stages - graphical data



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Consolidated Undrained Triaxial Compression test with Measurement of Pore Water Pressure (BS1377 : Part 8 : 1990)

Project No	A9031-19	Sample Details:	Hole No	ATK-CP-03
Project Name	HAVANT THICKET WATER STORAGE		Depth (m BGL)	7.00-7.45
			No	30
			Type	UT
			ID	
			Spec Ref	



Compression stages

Specimen	1	2	3
Cell pressure	400		
Initial pwp	300		
Initial σ_3'	100		
Rate of strain	0.06		

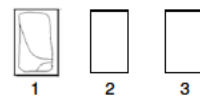
Failure conditions

Criterion	Maximum deviator stress	
Axial strain	2.16	%
$(\sigma_1' / \sigma_3')_f$	3.069	
$(\sigma_1' - \sigma_3')_f$	70.3	kPa
u_f	366	kPa
$\sigma_3' f$	34	kPa
$\sigma_1' f$	104	kPa
A_f	0.94	
Time to failure	36.0	hrs

Shear Strength Parameters

		Linear regression
c'	kPa	0.0
ϕ'	degrees	30.6
		Manual re-assessment
c'	kPa	-
ϕ'	degrees	-

Mode of failure



Notes : Deviator stresses corrected for area change, vertical side drains and 0.329 mm thick rubber membrane(s)

Consolidated Undrained Triaxial Compression test with Measurement of Pore Water Pressure (BS1377 : Part 8 : 1990)

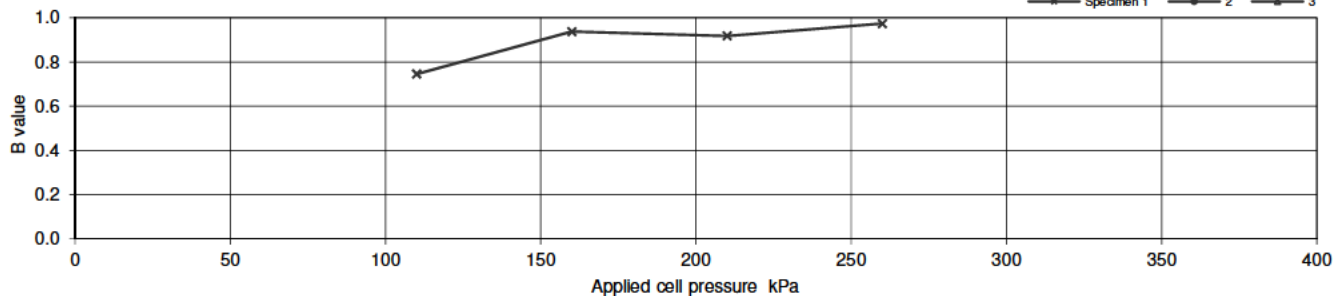
Project No	A9031-19	Sample Details:	Hole No	ATK-CP-04
Project Name	HAVANT THICKET WATER STORAGE		Depth (m BGL)	4.00
			No	19
			Type	UT
			ID	
			Spec Ref	

Specimen Details		1	2	3
Initial	Length mm	203.39		
	Diameter mm	103.09		
	Bulk Density Mg/m³	1.98		
	Water Content %	29		
	Dry density Mg/m³	1.53		
After consolidation	Length mm	204.17		
	Diameter mm	103.49		
	Bulk Density* Mg/m³	1.97		
	Water Content* %	30		
	Dry density* Mg/m³	1.52		

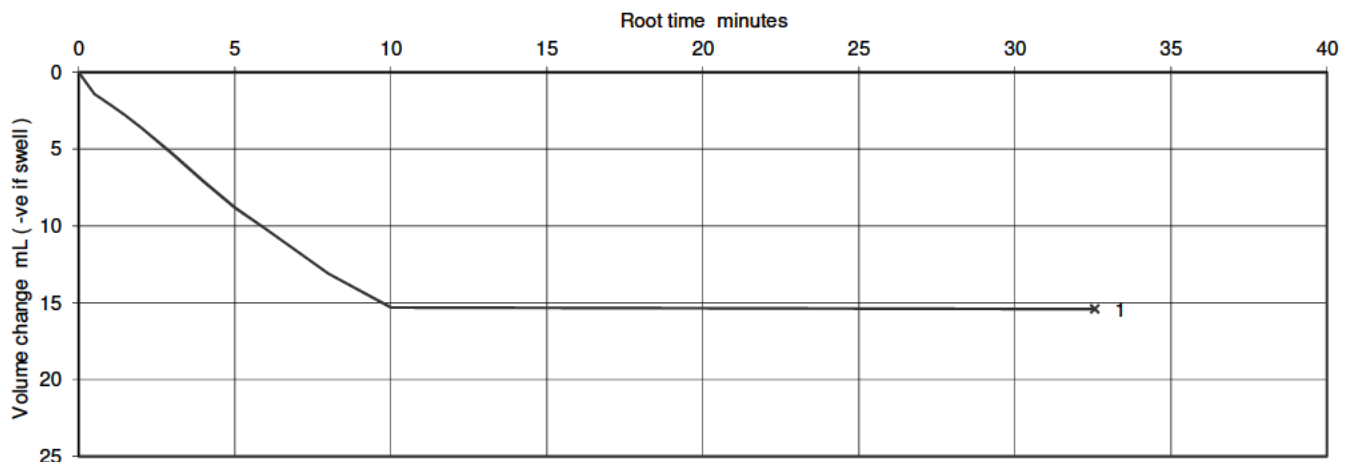
Soil Description	Firm brown laminated CLAY with silt on laminae.
Specimen Type /Preparation	UNDISTURBED

Saturation Details		Method of Saturation		
		Increments of cell and back pressure		
Cell pressure increments	kPa	50		
Differential Pressure	kPa	10		
Final Cell Pressure	kPa	260		
Final pore water pressure	kPa	233.7		
Final B Value		0.97		

* for undrained test, after consolidation and after test are the same.



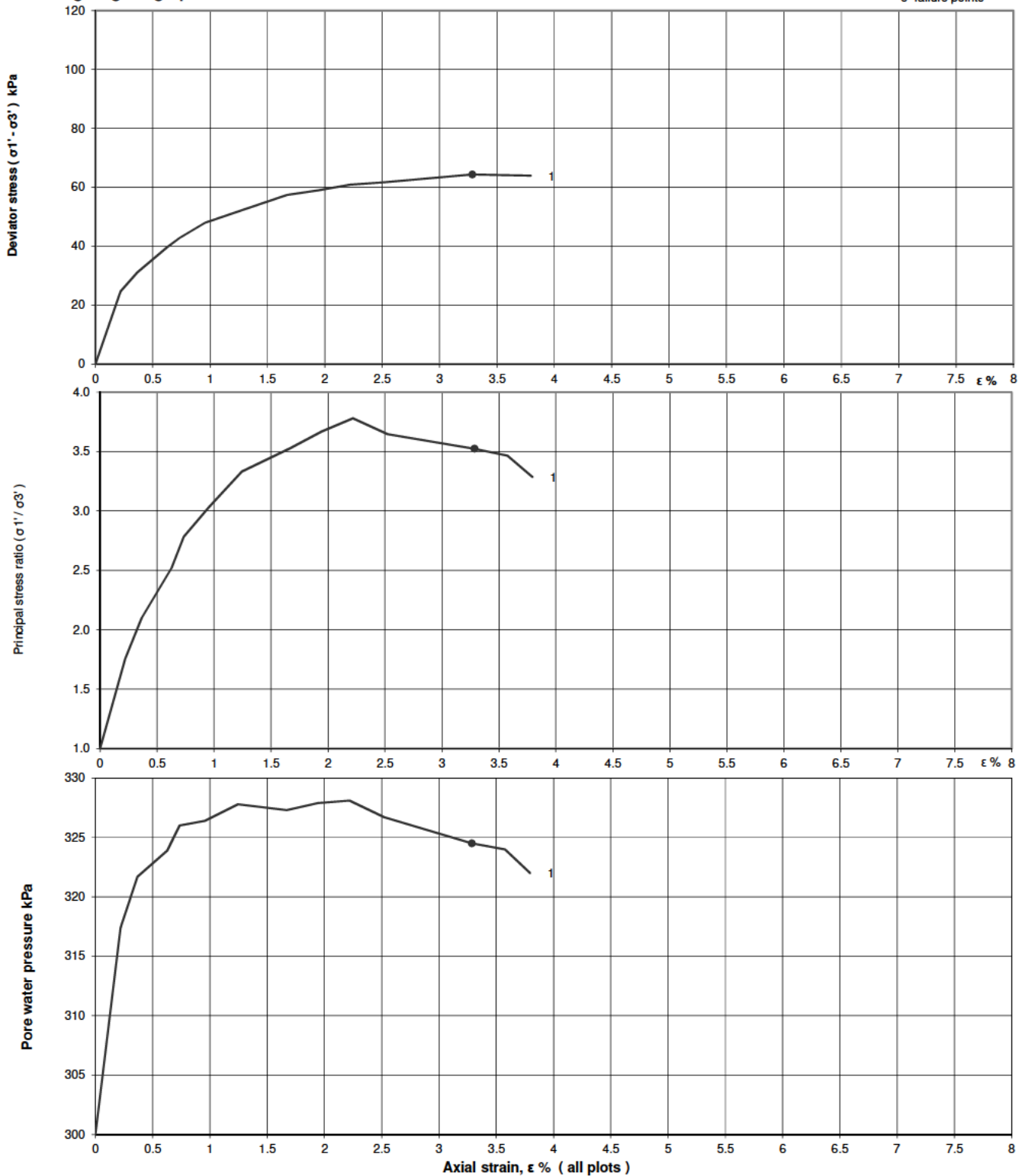
Consolidation Details	Drainage Conditions		From radial boundary and one end			
	Specimen No.		1	2	3	
	Cell Pressure applied		350			kPa
	Back Pressure applied		300			kPa
	Effective Pressure		50			kPa
	Pore pressure at start of consolidation		331			kPa
	Pore pressure at end of consolidation		300			kPa
	Pore pressure dissipation at end of consolidation		100			%
Consolidation parameters (see note to BS1377 : pt 8, clause 6.3.4)	Coefficient of Consolidation		C _{vi}	2.89		m²/year
	Coefficient of Compressibility		M _{vi}	0.29		m²/MN
	Coefficient of Permeability (calculated)		k _{vi}	2.6E-10		m/s



Consolidated Undrained Triaxial Compression test with Measurement of Pore Water Pressure (BS1377 : Part 8 : 1990)

Project No	A9031-19	Sample Details:	Hole No		ATK-CP-04	
Project Name	HAVANT THICKET WATER STORAGE		Depth (m BGL)		4.00	
			No	19	Type	UT
			ID			
			Spec Ref			

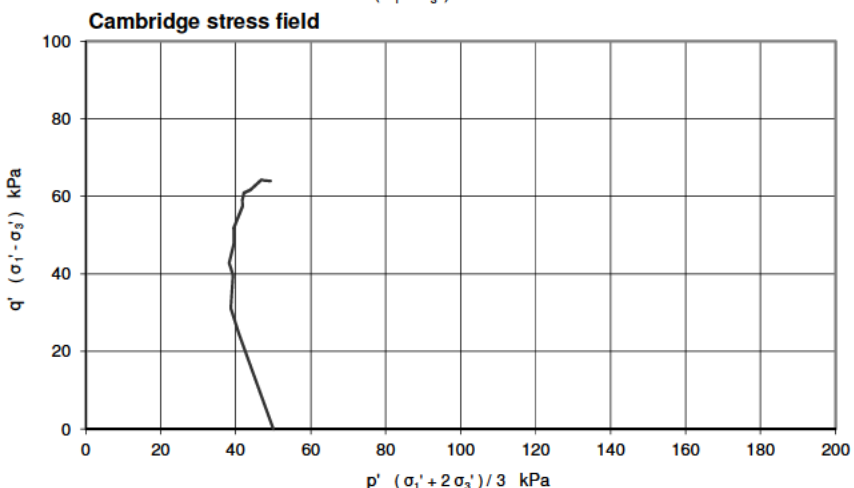
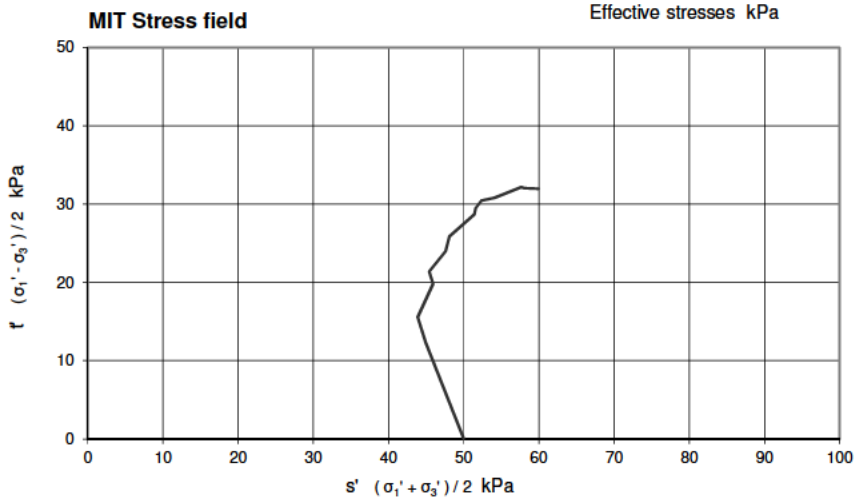
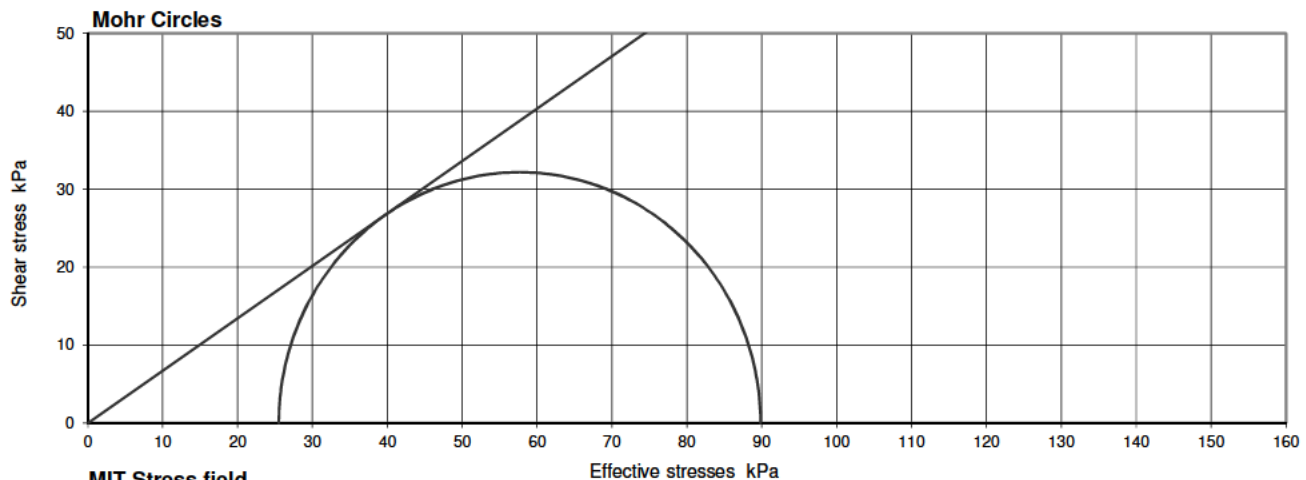
Shearing stages - graphical data



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Consolidated Undrained Triaxial Compression test with Measurement of Pore Water Pressure (BS1377 : Part 8 : 1990)

Project No	A9031-19	Sample Details:	Hole No	ATK-CP-04
Project Name	HAVANT THICKET WATER STORAGE		Depth (m BGL)	4.00
			No	19
			Type	UT
			ID	
			Spec Ref	



Compression stages

Specimen	1	2	3	
Cell pressure	350			kPa
Initial pwp	300			kPa
Initial σ_3'	50			kPa
Rate of strain	2.00			%/hr

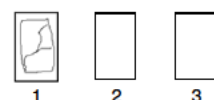
Failure conditions

Criterion	Maximum deviator stress			
Axial strain	3.29			%
$(\sigma_1' / \sigma_3')_f$	3.523			
$(\sigma_1' - \sigma_3')_f$	64.3			kPa
u_f	325			kPa
$\sigma_3'_f$	26			kPa
$\sigma_1'_f$	90			kPa
A_f	0.38			
Time to failure	1.6			hrs

Shear Strength Parameters

		Linear regression	
c'	kPa	0.0	
ϕ'	degrees	33.9	
		Manual re-assessment	
c'	kPa	-	
ϕ'	degrees	-	

Mode of failure



Notes : Deviator stresses corrected for area change, vertical side drains and 0.329 mm thick rubber membrane(s)

Consolidated Undrained Triaxial Compression test with Measurement of Pore Water Pressure (BS1377 : Part 8 : 1990)

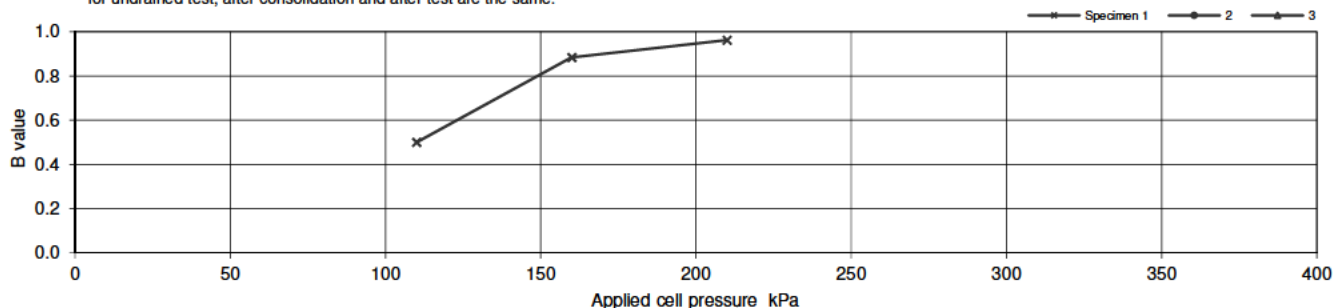
Project No	A9031-19	Sample Details:	Hole No	ATK-CP-04
Project Name	HAVANT THICKET WATER STORAGE		Depth (m BGL)	8.00
			No	34
			Type	UT
			ID	
			Spec Ref	

Specimen Details		1	2	3
Initial	Length mm	202.86		
	Diameter mm	103.14		
	Bulk Density Mg/m³	2.01		
	Water Content %	27		
	Dry density Mg/m³	1.59		
After consolidation	Length mm	202.67		
	Diameter mm	103.04		
	Bulk Density* Mg/m³	2.02		
	Water Content* %	27		
	Dry density* Mg/m³	1.59		

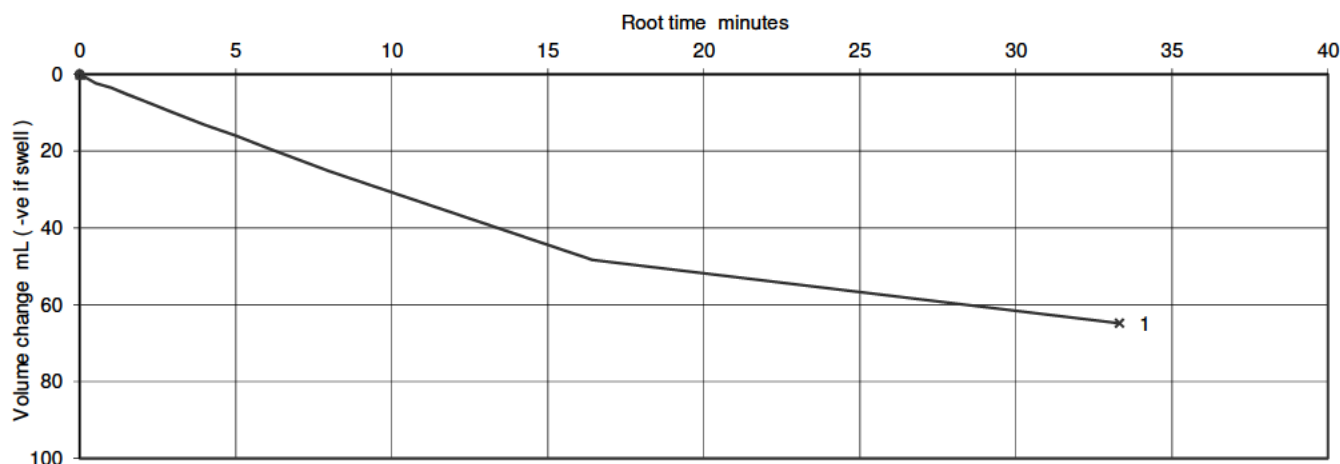
Soil Description	Stiff brown laminated CLAY. Laminae are silt.
Specimen Type /Preparation	UNDISTURBED

Saturation Details		Method of Saturation		
		Increments of cell and back pressure		
Cell pressure increments	kPa	50		
Differential Pressure	kPa	10		
Final Cell Pressure	kPa	210		
Final pore water pressure	kPa	181.6		
Final B Value		0.96		

* for undrained test, after consolidation and after test are the same.



Consolidation Details	Drainage Conditions		From radial boundary and one end			
	Specimen No.		1	2	3	
	Cell Pressure applied		470			kPa
	Back Pressure applied		300			kPa
	Effective Pressure		170			kPa
	Pore pressure at start of consolidation		442			kPa
	Pore pressure at end of consolidation		300			kPa
	Pore pressure dissipation at end of consolidation		100			%
Consolidation parameters (see note to BS1377 : pt 8, clause 6.3.4)	Coefficient of Consolidation		C _{vi}	0.55		m²/year
	Coefficient of Compressibility		M _{vi}	0.26		m²/MN
	Coefficient of Permeability (calculated)		k _{vi}	4.4E-11		m/s

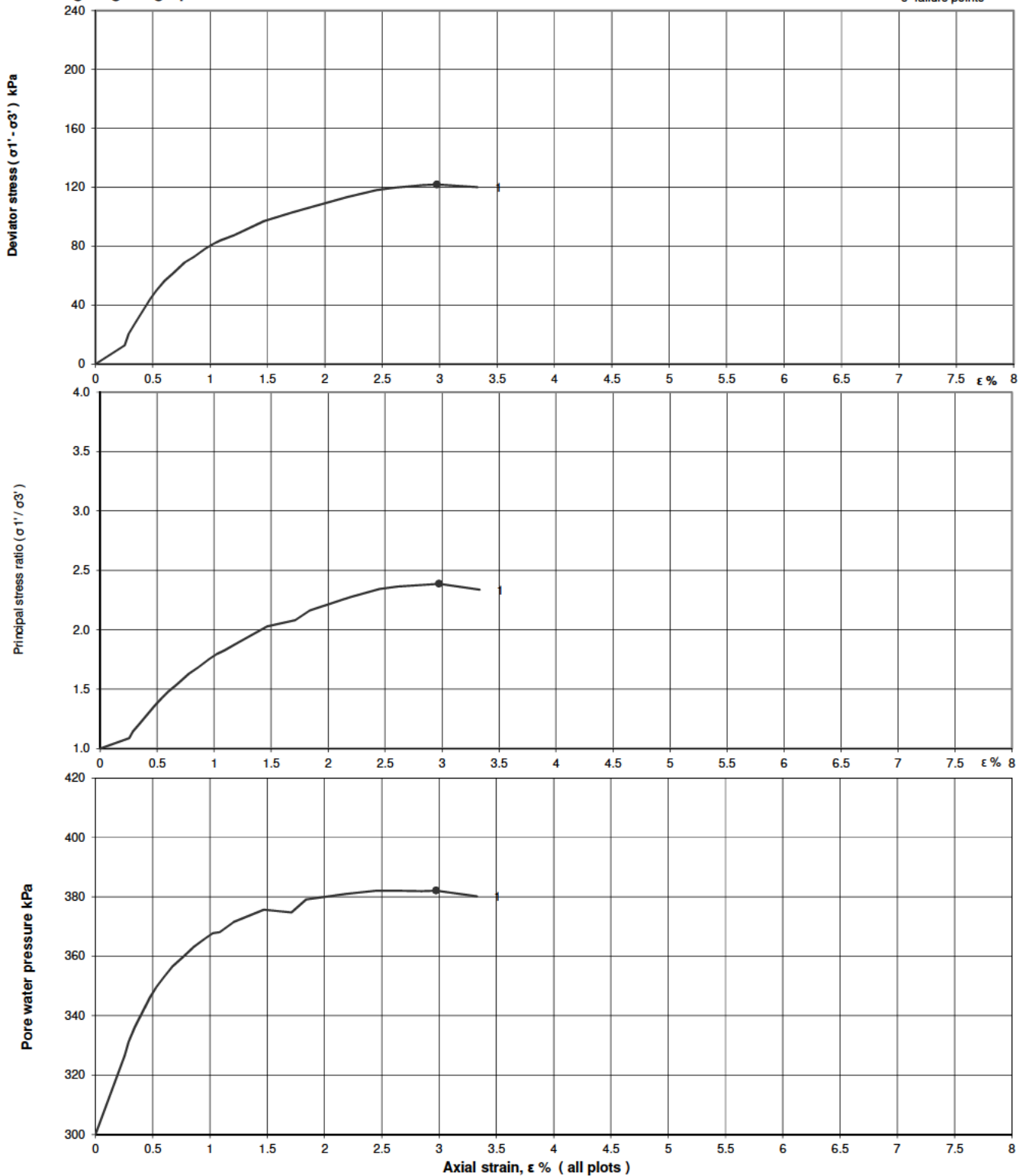


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Consolidated Undrained Triaxial Compression test with Measurement of Pore Water Pressure (BS1377 : Part 8 : 1990)

Project No	A9031-19	Sample Details:	Hole No		ATK-CP-04	
Project Name	HAVANT THICKET WATER STORAGE		Depth (m BGL)		8.00	
			No	34	Type	UT
			ID			
			Spec Ref			

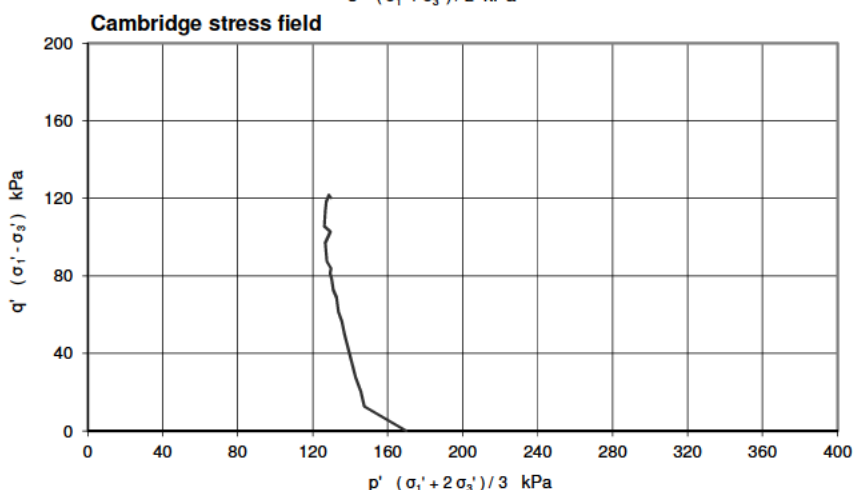
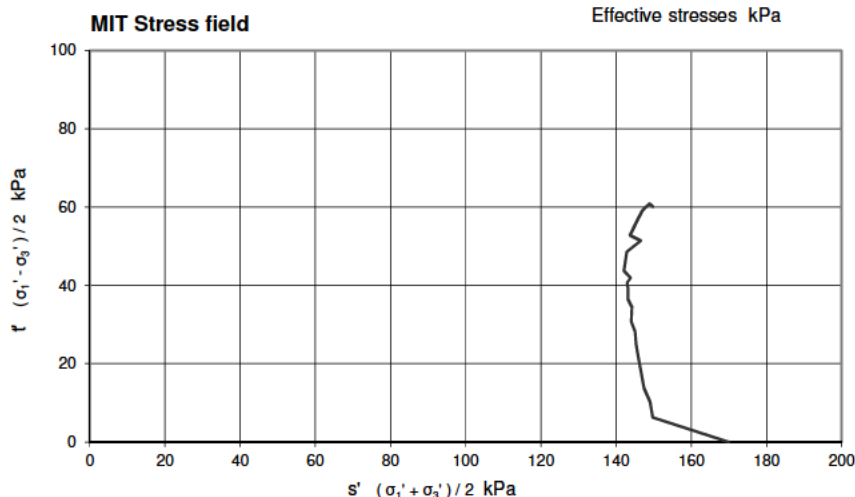
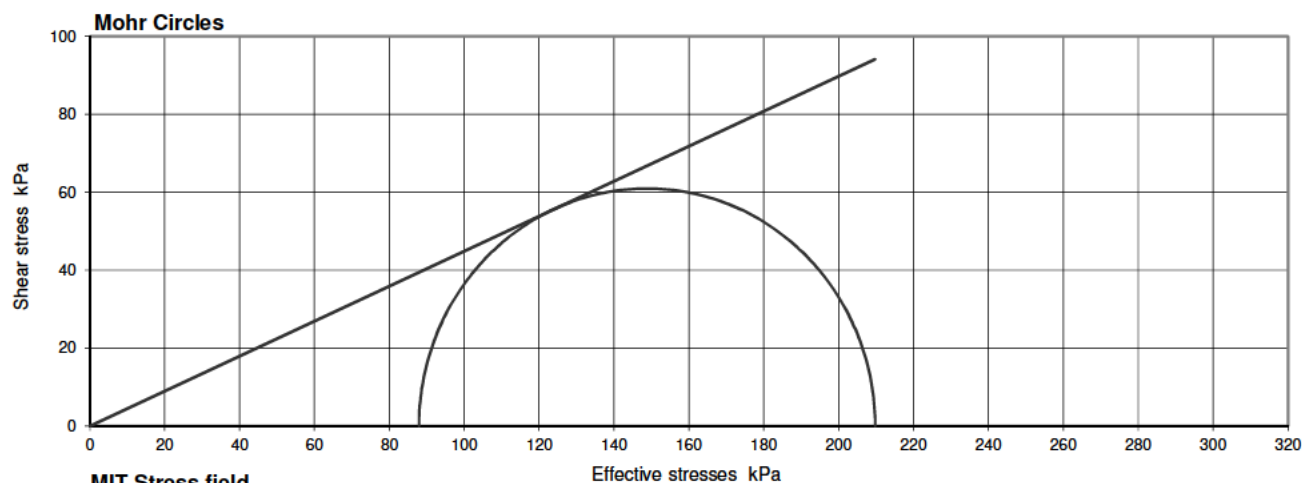
Shearing stages - graphical data



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Consolidated Undrained Triaxial Compression test with Measurement of Pore Water Pressure (BS1377 : Part 8 : 1990)

Project No	A9031-19	Sample Details:	Hole No	ATK-CP-04
Project Name	HAVANT THICKET WATER STORAGE		Depth (m BGL)	8.00
			No	34
			Type	UT
			ID	
			Spec Ref	



Compression stages

Specimen	1	2	3
Cell pressure	470		
Initial pwp	300		
Initial σ_3'	170		
Rate of strain	0.39		

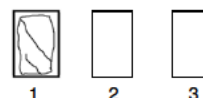
Failure conditions

Criterion	Maximum deviator stress	
Axial strain	2.98	%
$(\sigma_1' / \sigma_3')_f$	2.386	
$(\sigma_1' - \sigma_3')_f$	121.9	kPa
u_f	382	kPa
$\sigma_3'_f$	88	kPa
$\sigma_1'_f$	210	kPa
A_f	0.67	
Time to failure	7.6	hrs

Shear Strength Parameters

		Linear regression
c'	kPa	0.0
ϕ'	degrees	24.2
		Manual re-assessment
c'	kPa	-
ϕ'	degrees	-

Mode of failure



Notes : Deviator stresses corrected for area change, vertical side drains and 0.329 mm thick rubber membrane(s)

Consolidated Undrained Triaxial Compression test with Measurement of Pore Water Pressure (BS1377 : Part 8 : 1990)

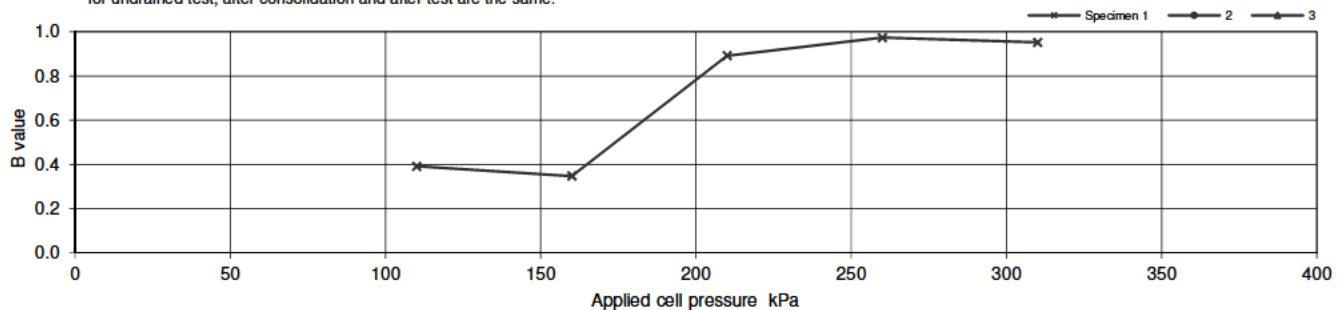
Project No	A9031-19	Sample Details:	Hole No	ATK-CP-05
Project Name	HAVANT THICKET WATER STORAGE		Depth (m BGL)	4.00
			No	19
			Type	UT
			ID	
			Spec Ref	

Specimen Details		1	2	3
Initial	Length mm	203.31		
	Diameter mm	103.32		
	Bulk Density Mg/m³	1.97		
	Water Content %	28		
	Dry density Mg/m³	1.54		
After consolidation	Length mm	204.39		
	Diameter mm	103.87		
	Bulk Density* Mg/m³	1.96		
	Water Content* %	29		
	Dry density* Mg/m³	1.52		

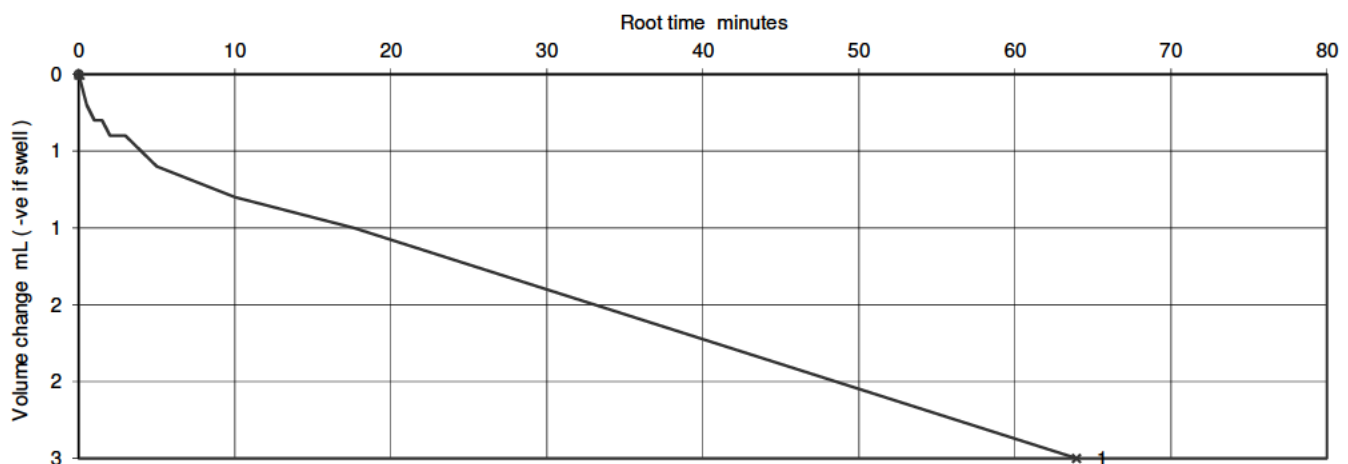
Soil Description	Stiff brown silty CLAY
Specimen Type /Preparation	UNDISTURBED

Saturation Details		Method of Saturation		
		Increments of cell and back pressure		
Cell pressure increments	kPa	50		
Differential Pressure	kPa	10		
Final Cell Pressure	kPa	260		
Final pore water pressure	kPa	262.8		
Final B Value		0.95		

* for undrained test, after consolidation and after test are the same.



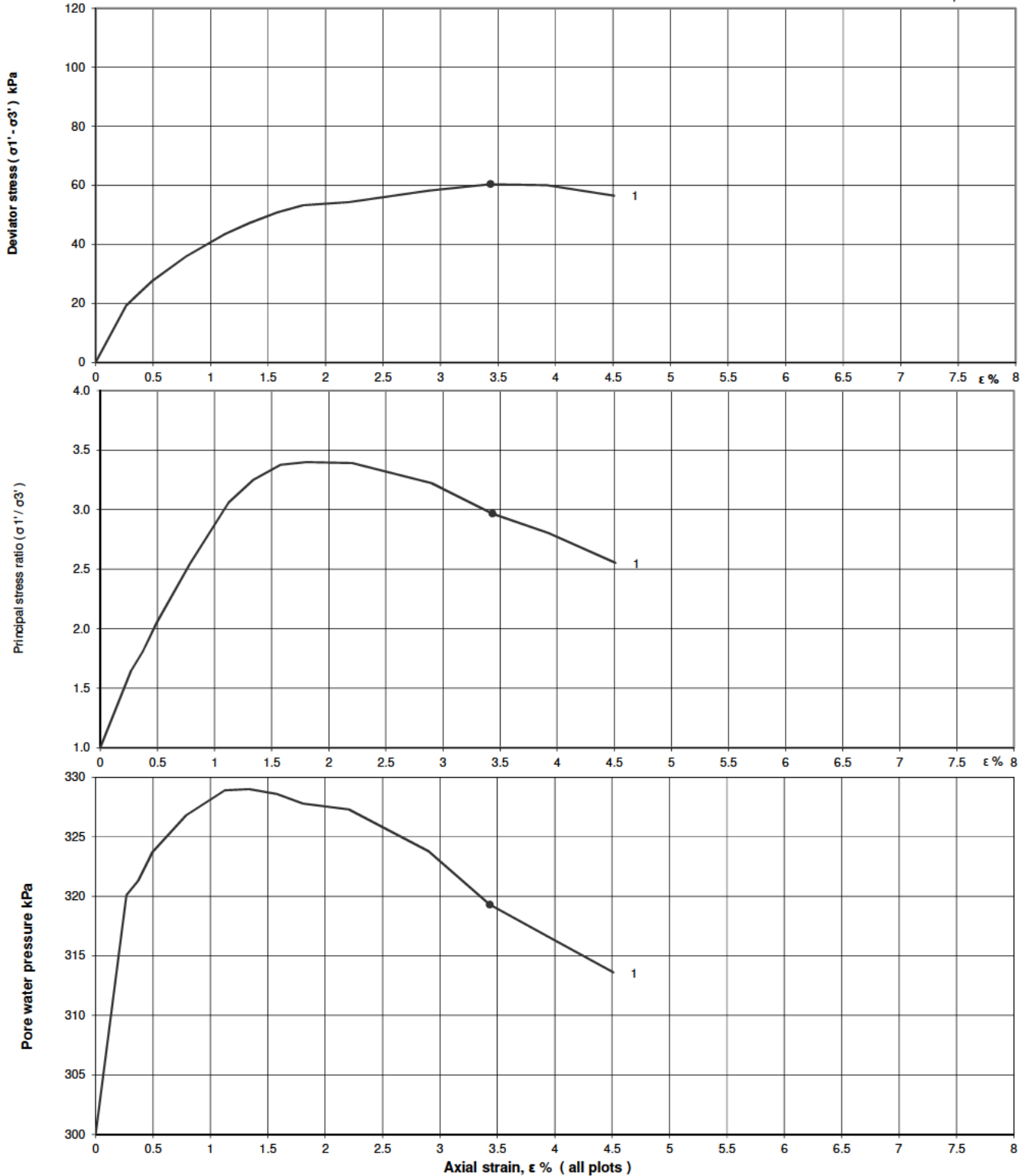
Consolidation Details		From one end			
Drainage Conditions		1	2	3	
Specimen No.					
Cell Pressure applied		350			kPa
Back Pressure applied		300			kPa
Effective Pressure		50			kPa
Pore pressure at start of consolidation		309			kPa
Pore pressure at end of consolidation		300			kPa
Pore pressure dissipation at end of consolidation		100			%
Consolidation parameters (see note to BS1377 : pt 8, clause 6.3.4)	Coefficient of Consolidation	C _{vi}	122.45		m²/year
	Coefficient of Compressibility	M _{vi}	0.15		m²/MN
	Coefficient of Permeability (calculated)	k _{vi}	5.9E-09		m/s



Consolidated Undrained Triaxial Compression test with Measurement of Pore Water Pressure (BS1377 : Part 8 : 1990)

Project No	A9031-19	Sample Details:	Hole No		ATK-CP-05	
Project Name	HAVANT THICKET WATER STORAGE		Depth (m BGL)		4.00	
			No	19	Type	UT
			ID			
			Spec Ref			

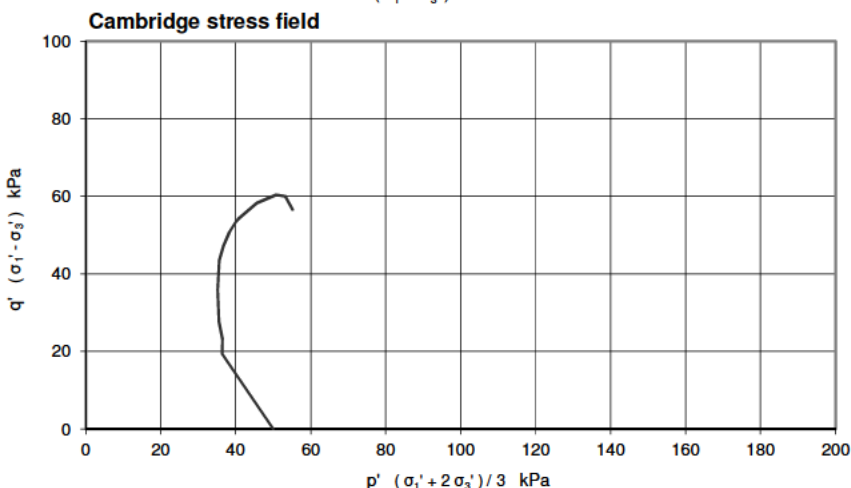
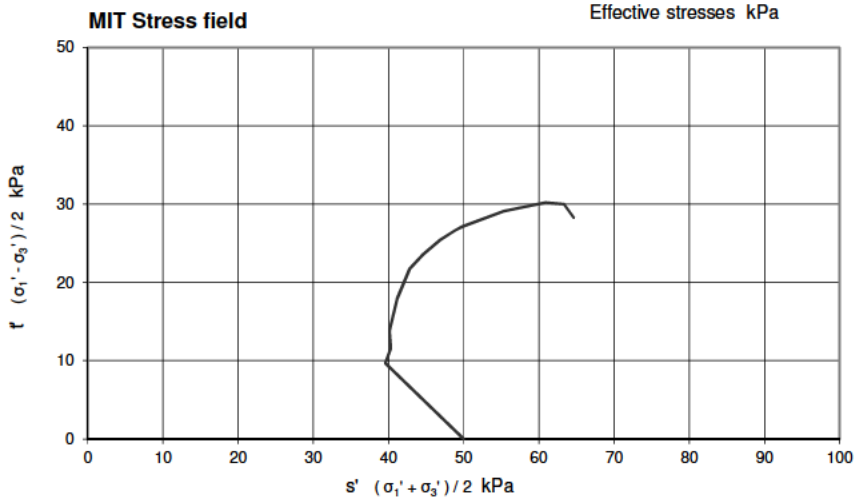
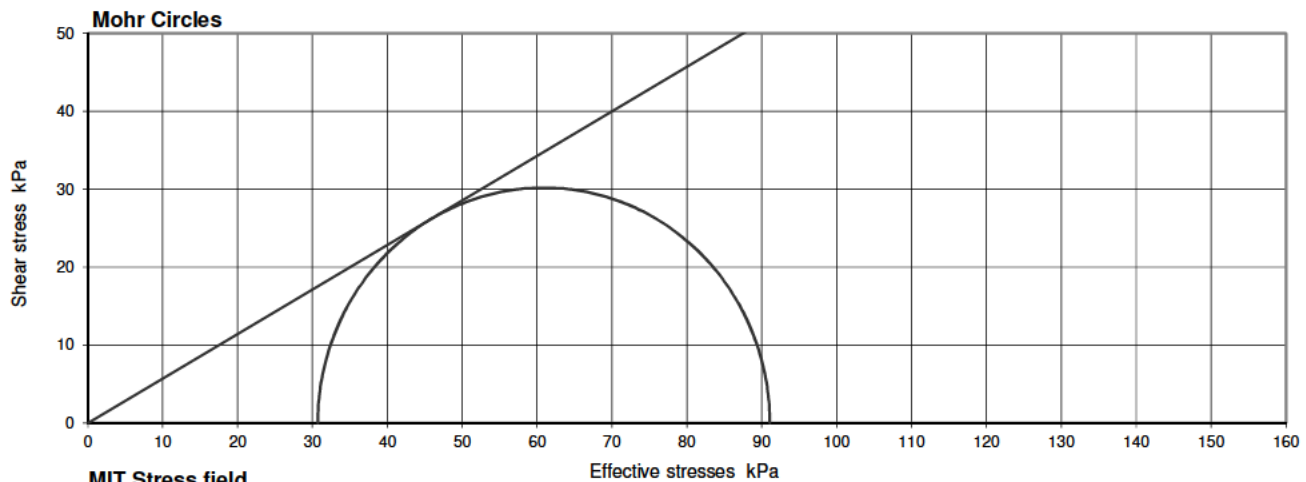
Shearing stages - graphical data



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Consolidated Undrained Triaxial Compression test with Measurement of Pore Water Pressure (BS1377 : Part 8 : 1990)

Project No	A9031-19	Sample Details:	Hole No	ATK-CP-05
Project Name	HAVANT THICKET WATER STORAGE		Depth (m BGL)	4.00
			No	19
			Type	UT
			ID	
			Spec Ref	



Compression stages

Specimen	1	2	3
Cell pressure	350		
Initial pwp	300		
Initial σ_3'	50		
Rate of strain	2.00		

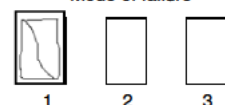
Failure conditions

Criterion	Maximum deviator stress		
Axial strain	3.43		%
$(\sigma_1' / \sigma_3')_f$	2.967		
$(\sigma_1' - \sigma_3')_f$	60.4		kPa
u_f	319		kPa
$\sigma_3'_f$	31		kPa
$\sigma_1'_f$	91		kPa
A_f	0.32		
Time to failure	1.7		hrs

Shear Strength Parameters

		Linear regression
c'	kPa	0.0
ϕ'	degrees	29.7
		Manual re-assessment
c'	kPa	-
ϕ'	degrees	-

Mode of failure



Notes : Deviator stresses corrected for area change, and 0.329 mm thick rubber membrane(s)
NO SIDE DRAINS

Consolidated Undrained Triaxial Compression test with Measurement of Pore Water Pressure (BS1377 : Part 8 : 1990)

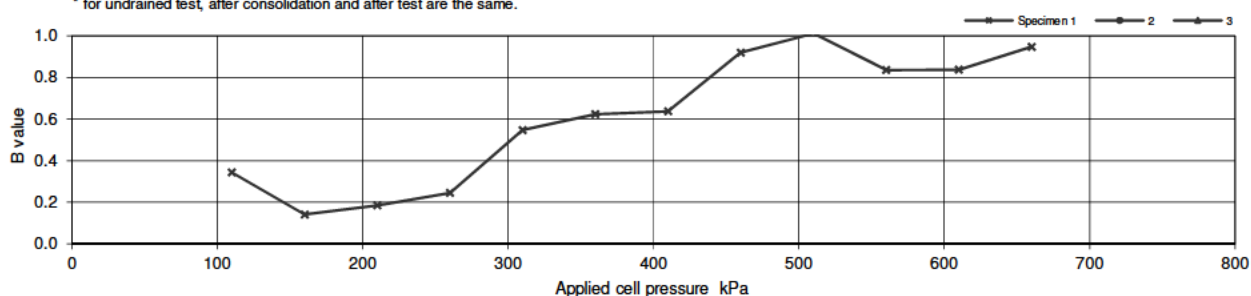
Project No	A9031-19	Sample Details:	Hole No	ATK-CP-05
Project Name	HAVANT THICKET WATER STORAGE		Depth (m BGL)	8.00
			No	34
			Type	UT
			ID	
			Spec Ref	

Specimen Details		1	2	3
Initial	Length mm	203.33		
	Diameter mm	102.95		
	Bulk Density Mg/m³	2.07		
	Water Content %	23		
	Dry density Mg/m³	1.68		
After consolidation	Length mm	204.26		
	Diameter mm	103.42		
	Bulk Density* Mg/m³	2.06		
	Water Content* %	24		
	Dry density* Mg/m³	1.66		

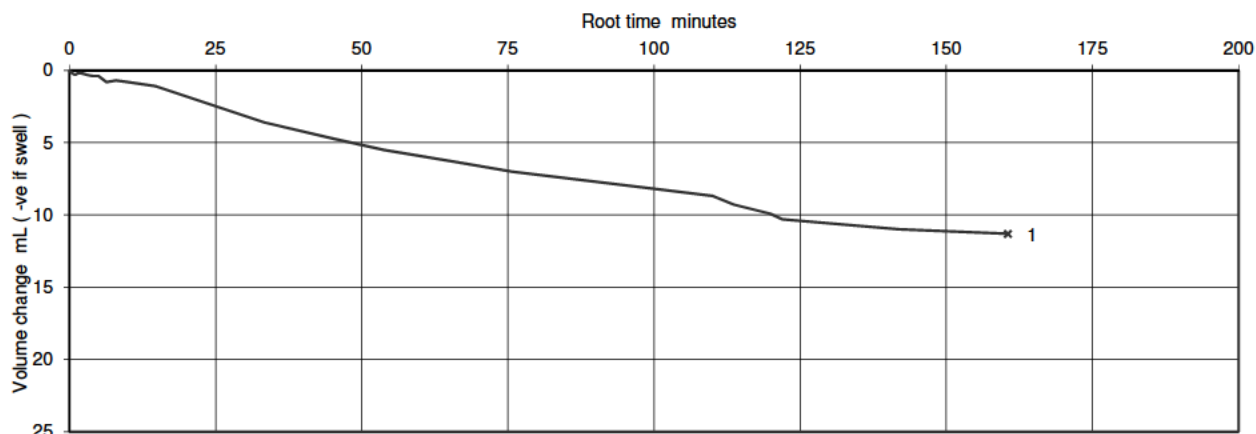
* for undrained test, after consolidation and after test are the same.

Soil Description	Stiff brown silty CLAY.
Specimen Type /Preparation	UNDISTURBED

Saturation Details		Method of Saturation		
		Increments of cell and back pressure		
Cell pressure increments	kPa	50		
Differential Pressure	kPa	10		
Final Cell Pressure	kPa	660		
Final pore water pressure	kPa	591.3		
Final B Value		0.96		



Consolidation Details	Drainage Conditions		From one end			
	Specimen No.		1	2	3	
	Cell Pressure applied		700			kPa
	Back Pressure applied		600			kPa
	Effective Pressure		100			kPa
	Pore pressure at start of consolidation		630			kPa
	Pore pressure at end of consolidation		557			kPa
	Pore pressure dissipation at end of consolidation		243			%
Consolidation parameters (see note to BS1377 : pt 8, clause 6.3.4)	Coefficient of Consolidation		C_{vi}	2.07		m²/year
	Coefficient of Compressibility		M_{vi}	0.08		m²/MN
	Coefficient of Permeability (calculated)		k_{vi}	5.1E-11		m/s

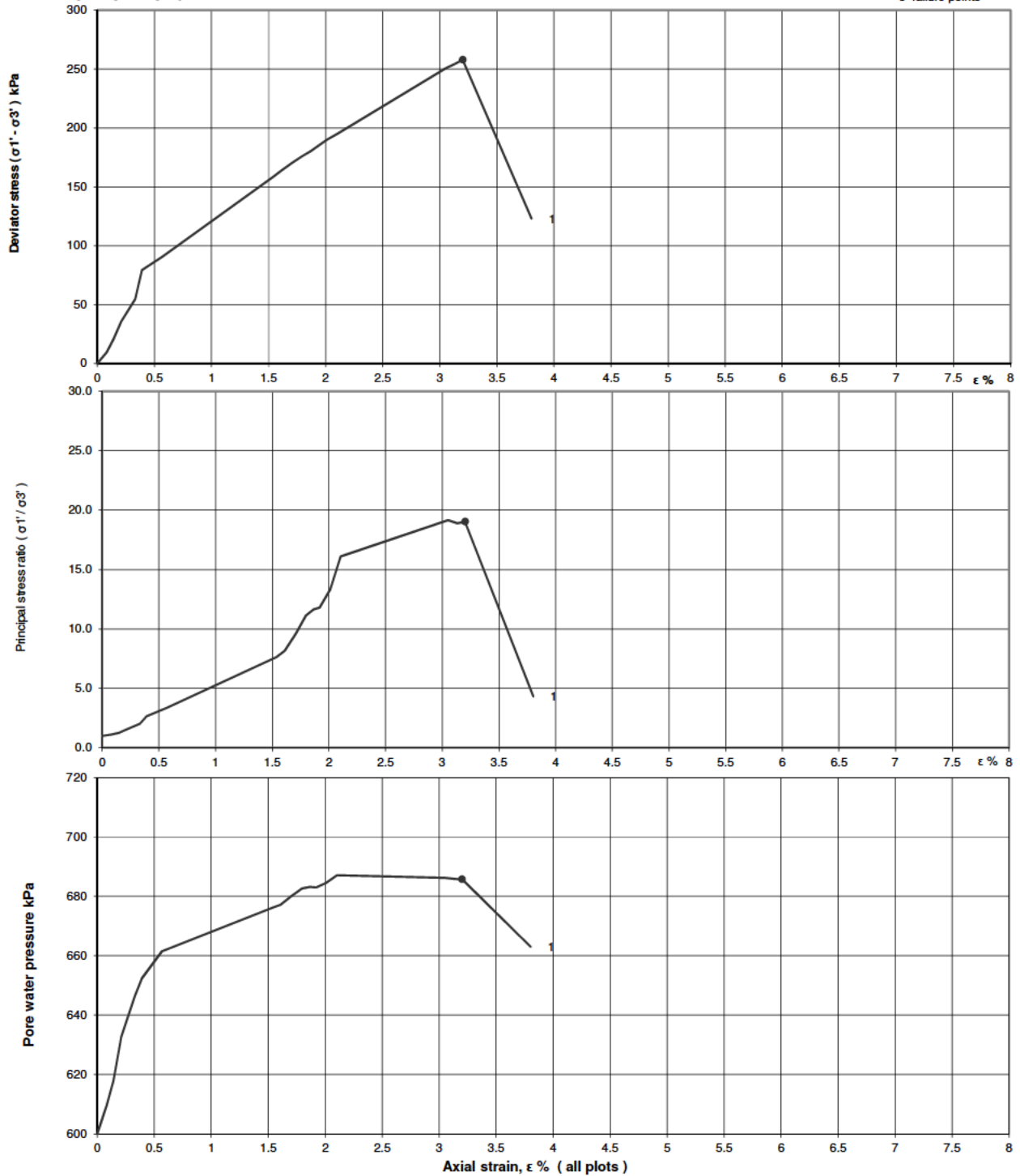


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**Consolidated Undrained Triaxial Compression test with Measurement of Pore Water Pressure
(BS1377 : Part 8 : 1990)**

Project No	A9031-19	Sample Details:	Hole No		ATK-CP-05	
Project Name	HAVANT THICKET WATER STORAGE		Depth (m BGL)		8.00	
			No	34	Type	UT
			ID			
			Spec Ref			

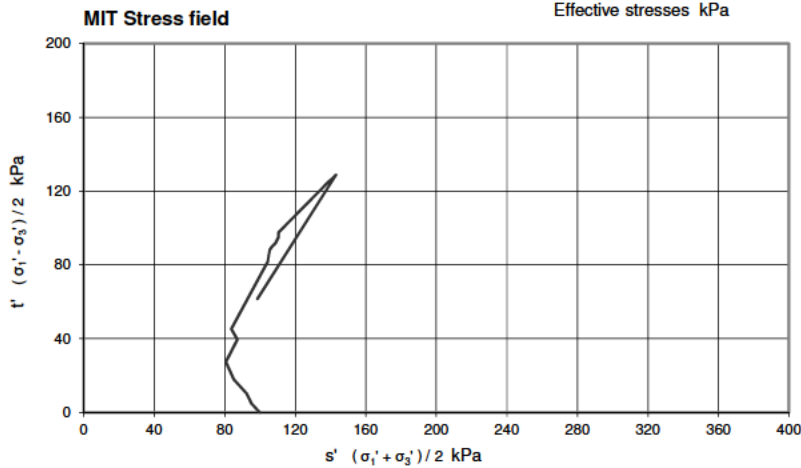
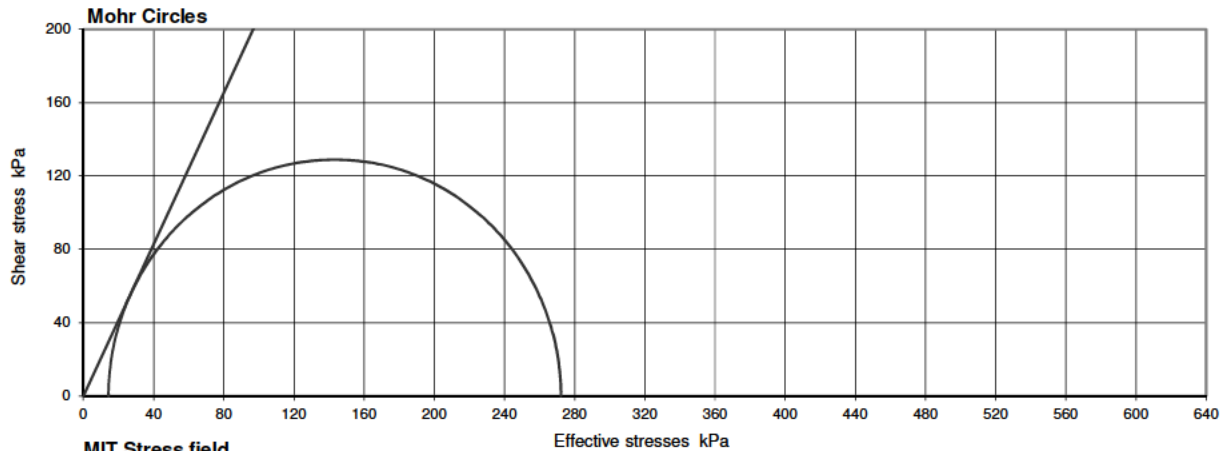
Shearing stages - graphical data



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Consolidated Undrained Triaxial Compression test with Measurement of Pore Water Pressure (BS1377 : Part 8 : 1990)

Project No	A9031-19	Sample Details:	Hole No	ATK-CP-05
Project Name	HAVANT THICKET WATER STORAGE		Depth (m BGL)	8.00
			No	34
			Type	UT
			ID	
			Spec Ref	



Compression stages

Specimen	1	2	3
Cell pressure	700		
Initial pwp	600		
Initial σ_3'	100		
Rate of strain	0.06		

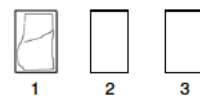
Failure conditions

Criterion	Maximum deviator stress	
Axial strain	3.20	%
$(\sigma_1' / \sigma_3')_f$	19.032	
$(\sigma_1' - \sigma_3')_f$	257.9	kPa
u_f	686	kPa
$\sigma_3' f$	14	kPa
$\sigma_1' f$	272	kPa
A_f	0.33	
Time to failure	53.4	hrs

Shear Strength Parameters

		Linear regression
c'	kPa	0.0
ϕ'	degrees	64.2
		Manual re-assessment
c'	kPa	-
ϕ'	degrees	-

Mode of failure



Notes : Deviator stresses corrected for area change, and 0.329 mm thick rubber membrane(s)

Consolidated Undrained Triaxial Compression test with Measurement of Pore Water Pressure (BS1377 : Part 8 : 1990)

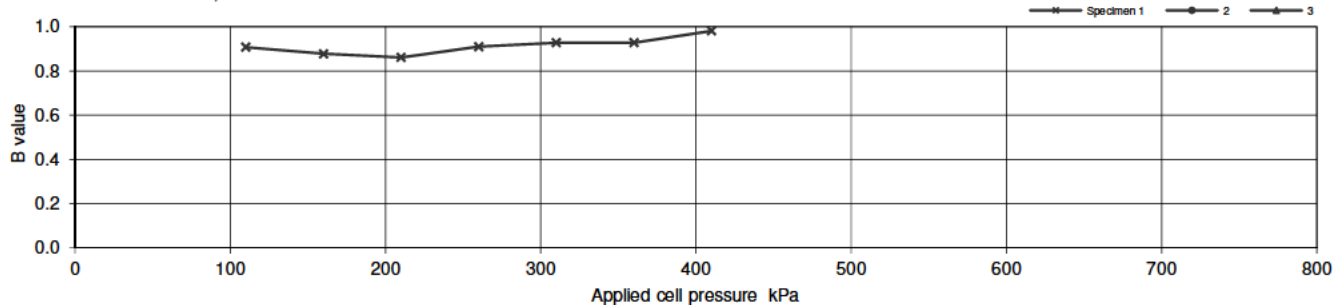
Project No	A9031-19	Sample Details:	Hole No	ATK-CP-06
Project Name	HAVANT THICKET WATER STORAGE		Depth (m BGL)	6-6.45
			No	27
			Type	UT
			ID	
			Spec Ref	

Specimen Details		1	2	3
Initial	Length mm	203.75		
	Diameter mm	102.79		
	Bulk Density Mg/m³	2.18		
	Water Content %	17		
	Dry density Mg/m³	1.87		
After consolidation	Length mm	205.44		
	Diameter mm	103.63		
	Bulk Density* Mg/m³	2.15		
	Water Content* %	18		
	Dry density* Mg/m³	1.82		

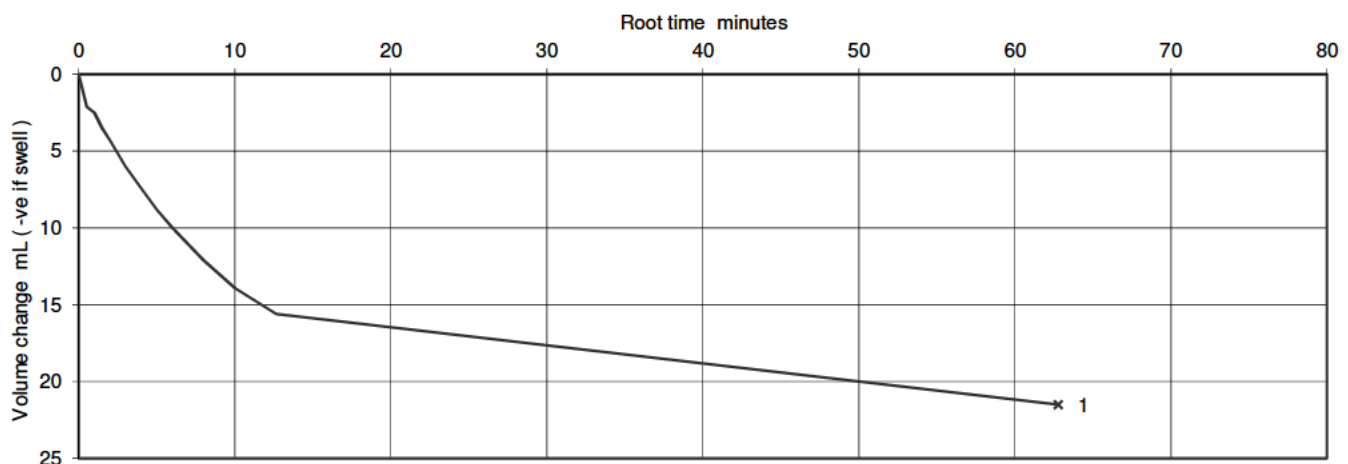
Soil Description	Firm multicoloured slightly sandy CLAY
Specimen Type /Preparation	UNDISTURBED

Saturation Details		Method of Saturation		
		Increments of cell and back pressure		
Cell pressure increments	kPa	50		
Differential Pressure	kPa	10		
Final Cell Pressure	kPa	410		
Final pore water pressure	kPa	381.5		
Final B Value		0.98		

* for undrained test, after consolidation and after test are the same.



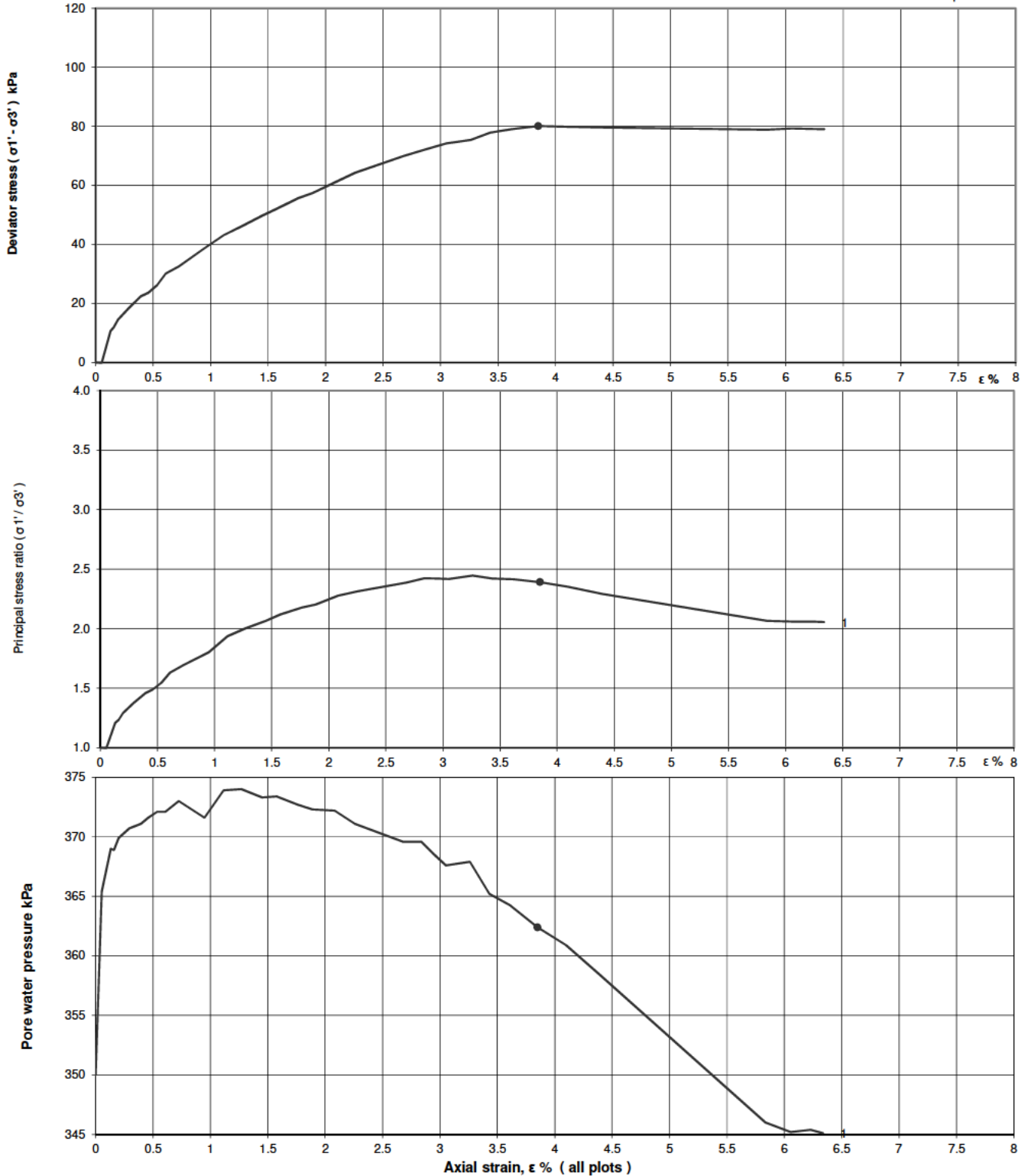
Consolidation Details	Drainage Conditions		From radial boundary and one end			
	Specimen No.		1	2	3	
	Cell Pressure applied		420			kPa
	Back Pressure applied		350			kPa
	Effective Pressure		70			kPa
	Pore pressure at start of consolidation		396			kPa
	Pore pressure at end of consolidation		350			kPa
	Pore pressure dissipation at end of consolidation		100			%
Consolidation parameters (see note to BS1377 : pt 8, clause 6.3.4)	Coefficient of Consolidation		C _{vi}	0.42		m²/year
	Coefficient of Compressibility		M _{vi}	0.27		m²/MN
	Coefficient of Permeability (calculated)		k _{vi}	3.5E-11		m/s



Consolidated Undrained Triaxial Compression test with Measurement of Pore Water Pressure (BS1377 : Part 8 : 1990)

Project No	A9031-19	Sample Details:	Hole No		ATK-CP-06	
Project Name	HAVANT THICKET WATER STORAGE		Depth (m BGL)		6-6.45	
			No	27	Type	UT
			ID			
			Spec Ref			

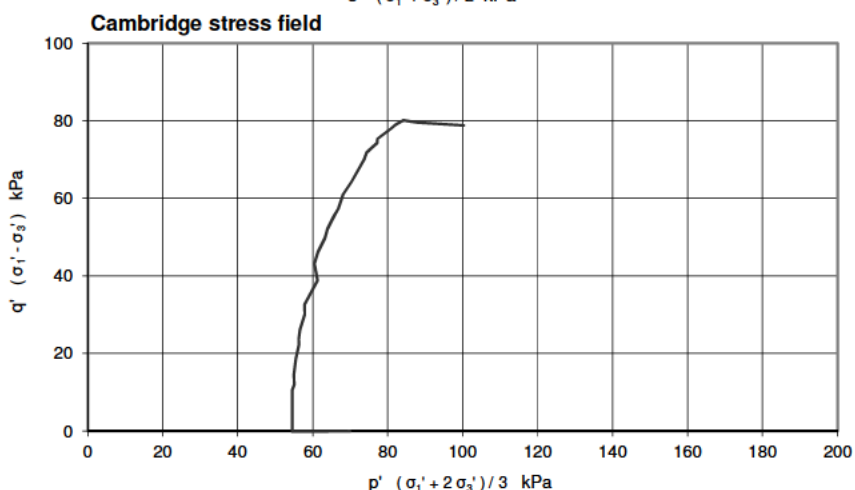
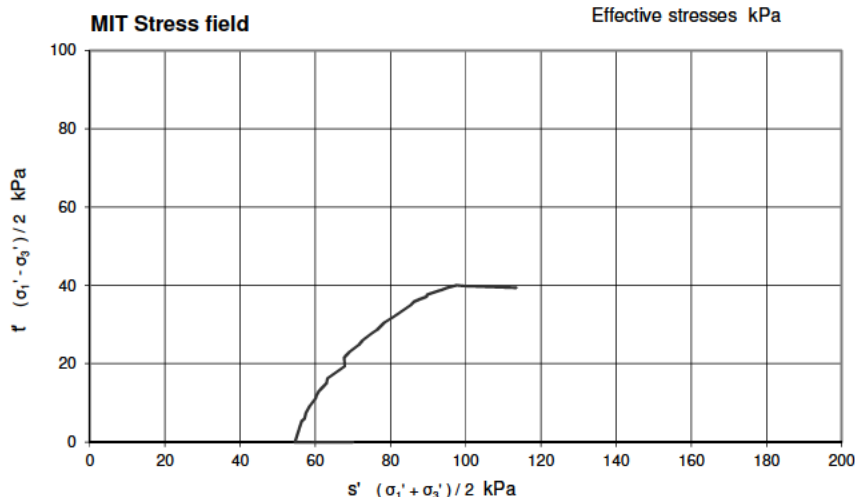
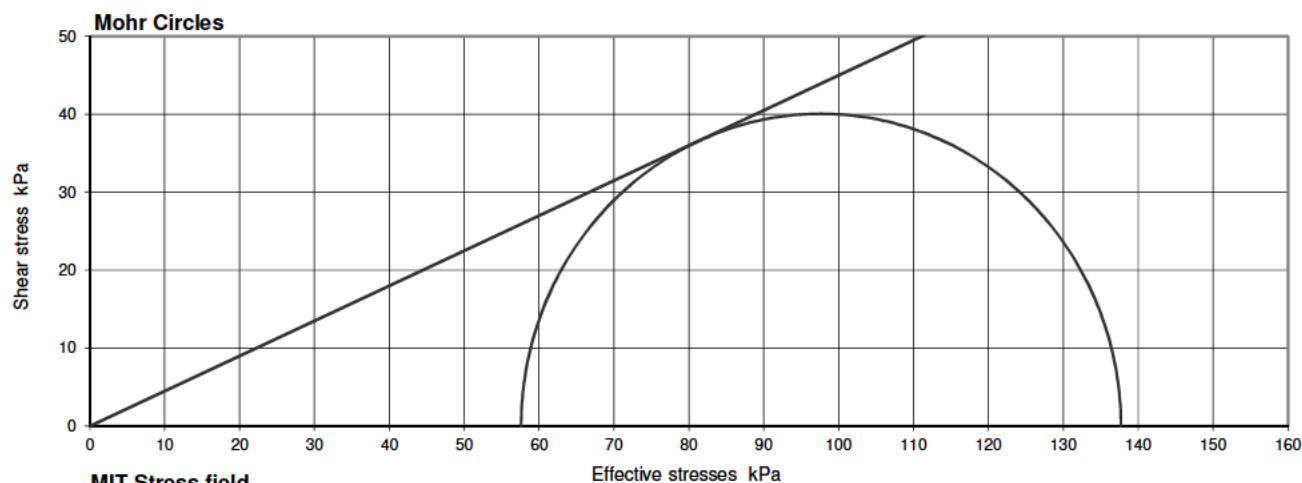
Shearing stages - graphical data



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Consolidated Undrained Triaxial Compression test with Measurement of Pore Water Pressure (BS1377 : Part 8 : 1990)

Project No	A9031-19	Sample Details:	Hole No	ATK-CP-06
Project Name	HAVANT THICKET WATER STORAGE		Depth (m BGL)	6-6.45
			No	27
			Type	UT
			ID	
			Spec Ref	



Compression stages

Specimen	1	2	3
Cell pressure	420		
Initial pwp	350		
Initial σ_3'	70		
Rate of strain	0.62		

Failure conditions

Criterion	Maximum deviator stress	
Axial strain	3.85	%
$(\sigma_1' / \sigma_3')_f$	2.391	
$(\sigma_1' - \sigma_3')_f$	80.1	kPa
u_f	362	kPa
$\sigma_3'_f$	58	kPa
$\sigma_1'_f$	138	kPa
A_f	0.15	
Time to failure	6.2	hrs

Shear Strength Parameters

		Linear regression
c'	kPa	0.0
ϕ'	degrees	24.2
		Manual re-assessment
c'	kPa	-
ϕ'	degrees	-

Mode of failure



Notes : Deviator stresses corrected for area change, vertical side drains and 0.329 mm thick rubber membrane(s)

Consolidated Undrained Triaxial Compression test with Measurement of Pore Water Pressure (BS1377 : Part 8 : 1990)

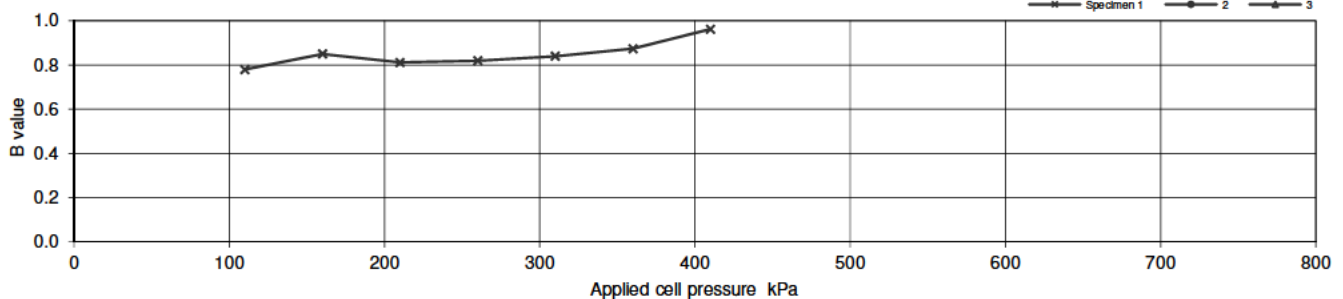
Project No	A9031-19	Sample Details:	Hole No	ATK-CP-06
Project Name	HAVANT THICKET WATER STORAGE		Depth (m BGL)	8.00-8.45
			No	34
			Type	UT
			ID	
			Spec Ref	

Specimen Details		1	2	3
Initial	Length mm	203.73		
	Diameter mm	103.55		
	Bulk Density Mg/m³	2.26		
	Water Content %	13		
	Dry density Mg/m³	1.99		
After consolidation	Length mm	205.07		
	Diameter mm	104.22		
	Bulk Density* Mg/m³	2.24		
	Water Content* %	15		
	Dry density* Mg/m³	1.95		

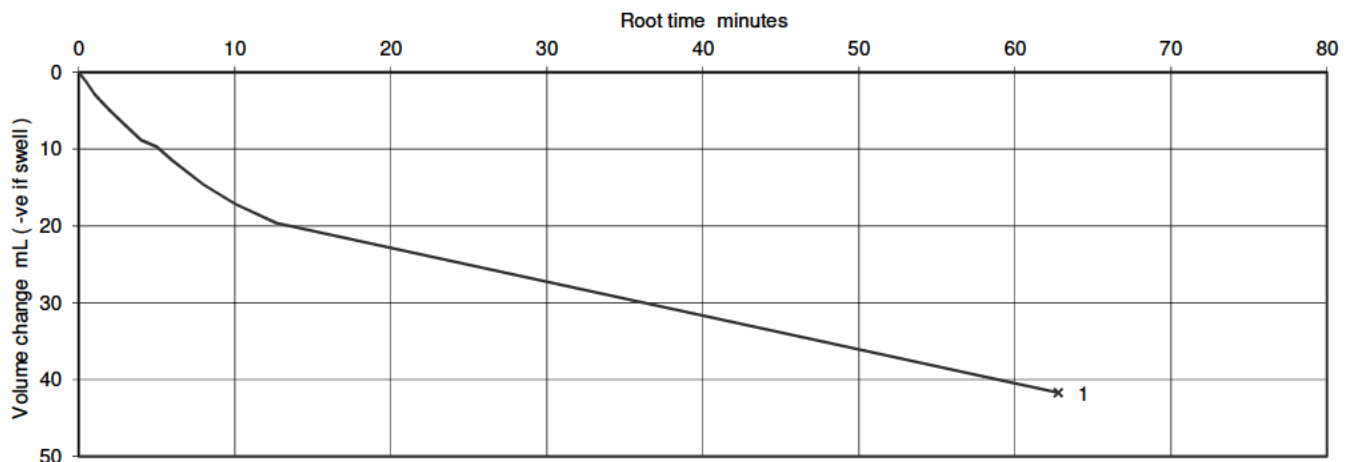
Soil Description	Stiff multicoloured slightly sandy CLAY
Specimen Type /Preparation	UNDISTURBED

Saturation Details		Method of Saturation		
		Increments of cell and back pressure		
Cell pressure increments	kPa	50		
Differential Pressure	kPa	10		
Final Cell Pressure	kPa	410		
Final pore water pressure	kPa	388.4		
Final B Value		0.96		

* for undrained test, after consolidation and after test are the same.



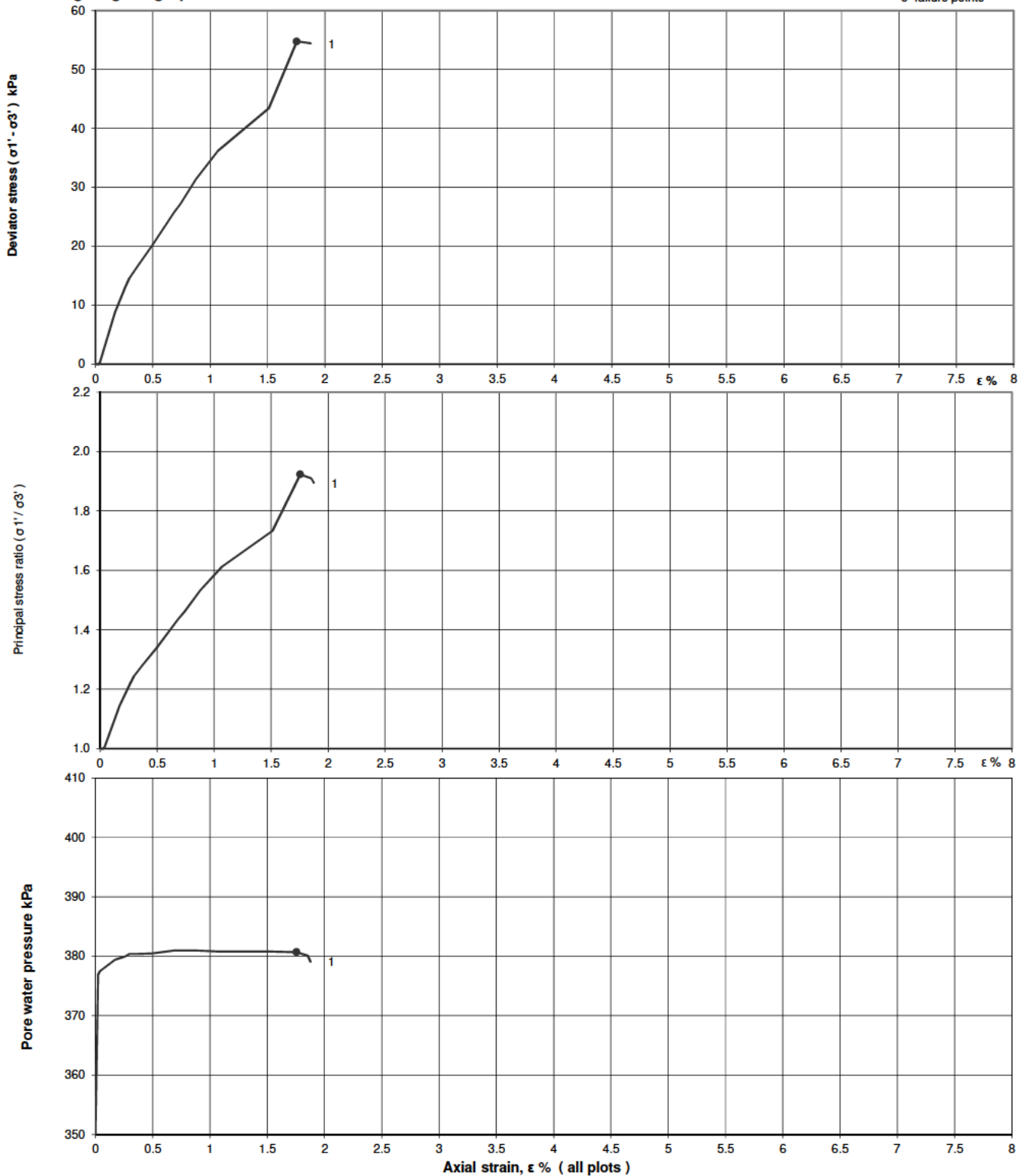
Drainage Conditions		From radial boundary and one end			
Specimen No.		1	2	3	
Consolidation Details	Cell Pressure applied	440			kPa
	Back Pressure applied	350			kPa
	Effective Pressure	90			kPa
	Pore pressure at start of consolidation	420			kPa
	Pore pressure at end of consolidation	350			kPa
	Pore pressure dissipation at end of consolidation	100			%
Consolidation parameters (see note to BS1377 : pt 8, clause 6.3.4)	Coefficient of Consolidation	C _{vi}	0.22		m²/year
	Coefficient of Compressibility	M _{vi}	0.33		m²/MN
	Coefficient of Permeability (calculated)	k _{vi}	2.3E-11		m/s



Consolidated Undrained Triaxial Compression test with Measurement of Pore Water Pressure (BS1377 : Part 8 : 1990)

Project No	A9031-19	Sample Details:	Hole No		ATK-CP-06	
Project Name	HAVANT THICKET WATER STORAGE		Depth (m BGL)		8.00-8.45	
			No	34	Type	UT
			ID			
			Spec Ref			

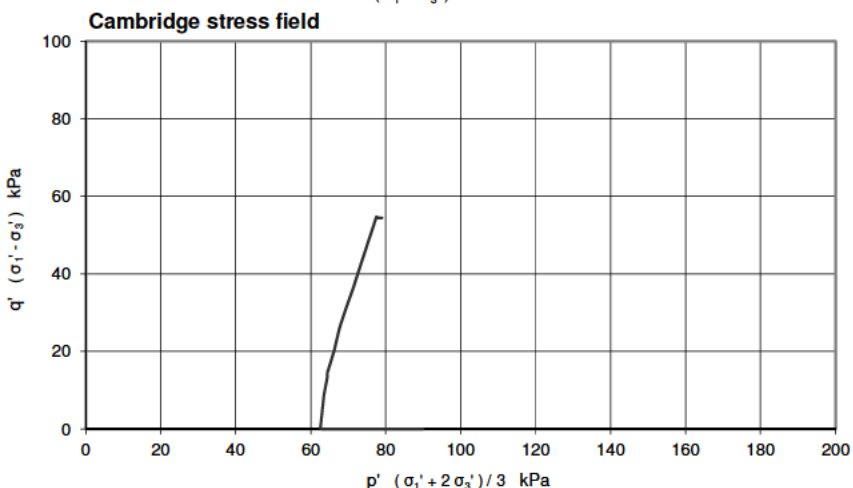
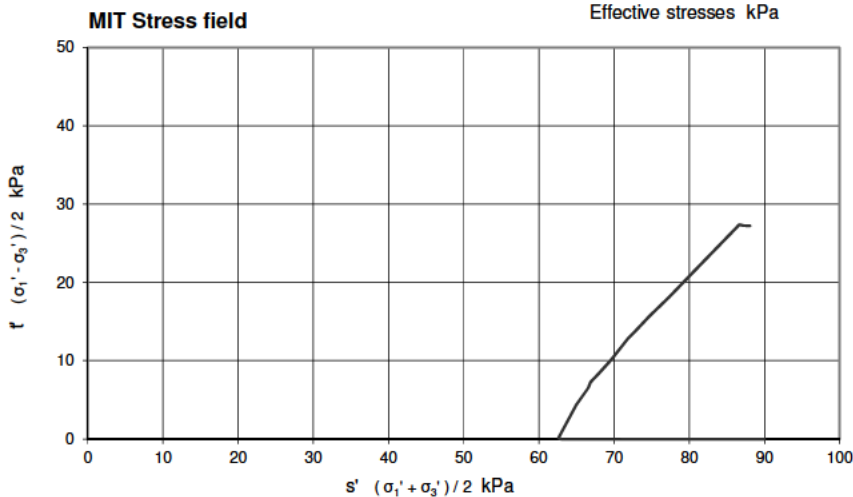
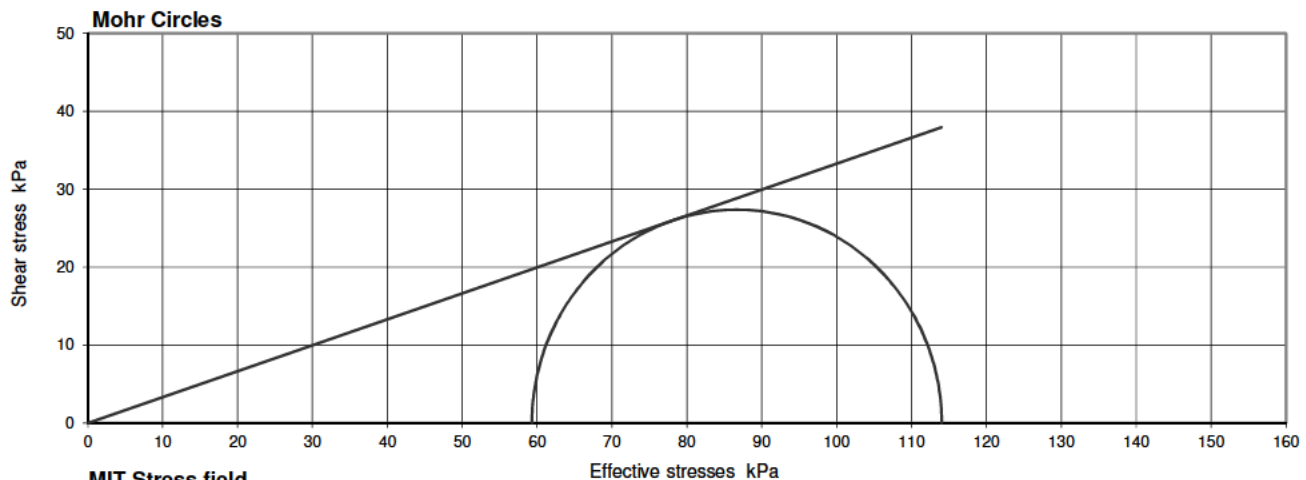
Shearing stages - graphical data



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Consolidated Undrained Triaxial Compression test with Measurement of Pore Water Pressure (BS1377 : Part 8 : 1990)

Project No	A9031-19	Sample Details:	Hole No	ATK-CP-06
Project Name	HAVANT THICKET WATER STORAGE		Depth (m BGL)	8.00-8.45
			No	34
			Type	UT
			ID	
			Spec Ref	



Compression stages

Specimen	1	2	3
Cell pressure	440		
Initial pwp	350		
Initial σ_3'	90		
Rate of strain	0.16		

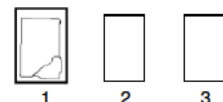
Failure conditions

Criterion	Maximum deviator stress	
Axial strain	1.76	%
$(\sigma_1' / \sigma_3')_f$	1.923	
$(\sigma_1' - \sigma_3')_f$	54.7	kPa
u_f	381	kPa
$\sigma_3'_f$	59	kPa
$\sigma_1'_f$	114	kPa
A_f	0.56	
Time to failure	11.0	hrs

Shear Strength Parameters

		Linear regression
c'	kPa	0.0
ϕ'	degrees	18.4
		Manual re-assessment
c'	kPa	-
ϕ'	degrees	-

Mode of failure



Notes : Deviator stresses corrected for area change, vertical side drains and 0.329 mm thick rubber membrane(s)

Consolidated Undrained Triaxial Compression test with Measurement of Pore Water Pressure (BS1377 : Part 8 : 1990)

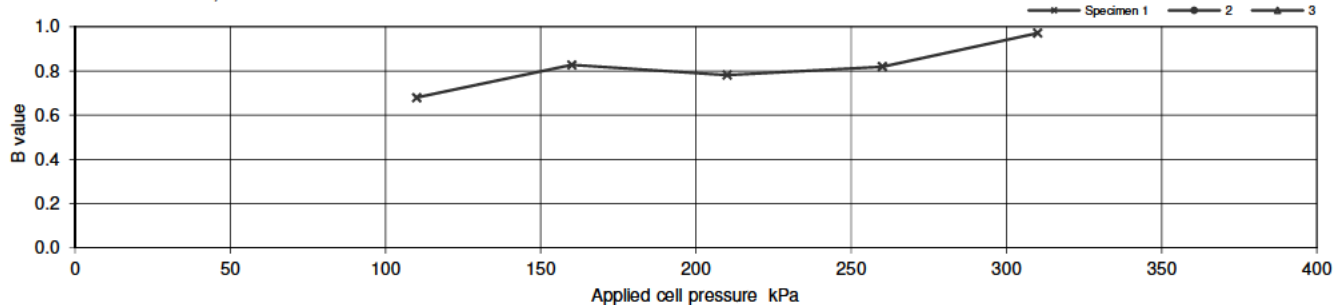
Project No	A9031-19	Sample Details:	Hole No	ATK-CP-11
Project Name	HAVANT THICKET WATER STORAGE		Depth (m BGL)	6.00
			No	27
			Type	UT
			ID	
			Spec Ref	

Specimen Details		1	2	3
Initial	Length mm	203.65		
	Diameter mm	103.68		
	Bulk Density Mg/m³	1.97		
	Water Content %	29		
	Dry density Mg/m³	1.53		
After consolidation	Length mm	204.12		
	Diameter mm	103.92		
	Bulk Density* Mg/m³	1.97		
	Water Content* %	30		
	Dry density* Mg/m³	1.52		

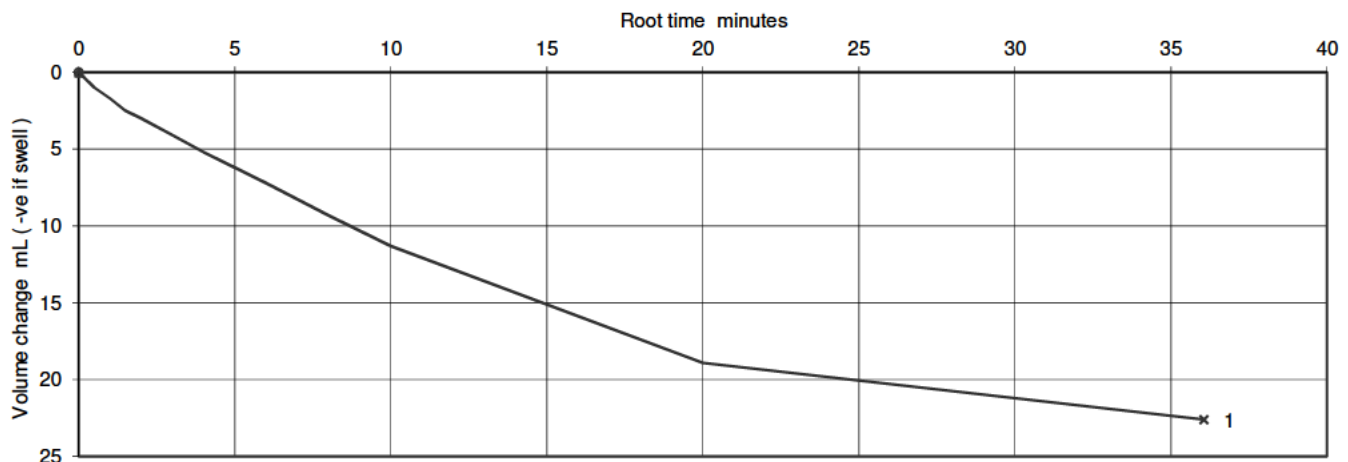
Soil Description	Firm brown laminated CLAY. Laminæ are silt.
Specimen Type /Preparation	UNDISTURBED

Saturation Details		Method of Saturation		
		Increments of cell and back pressure		
Cell pressure increments	kPa	50		
Differential Pressure	kPa	10		
Final Cell Pressure	kPa	310		
Final pore water pressure	kPa	293.7		
Final B Value		0.97		

* for undrained test, after consolidation and after test are the same.



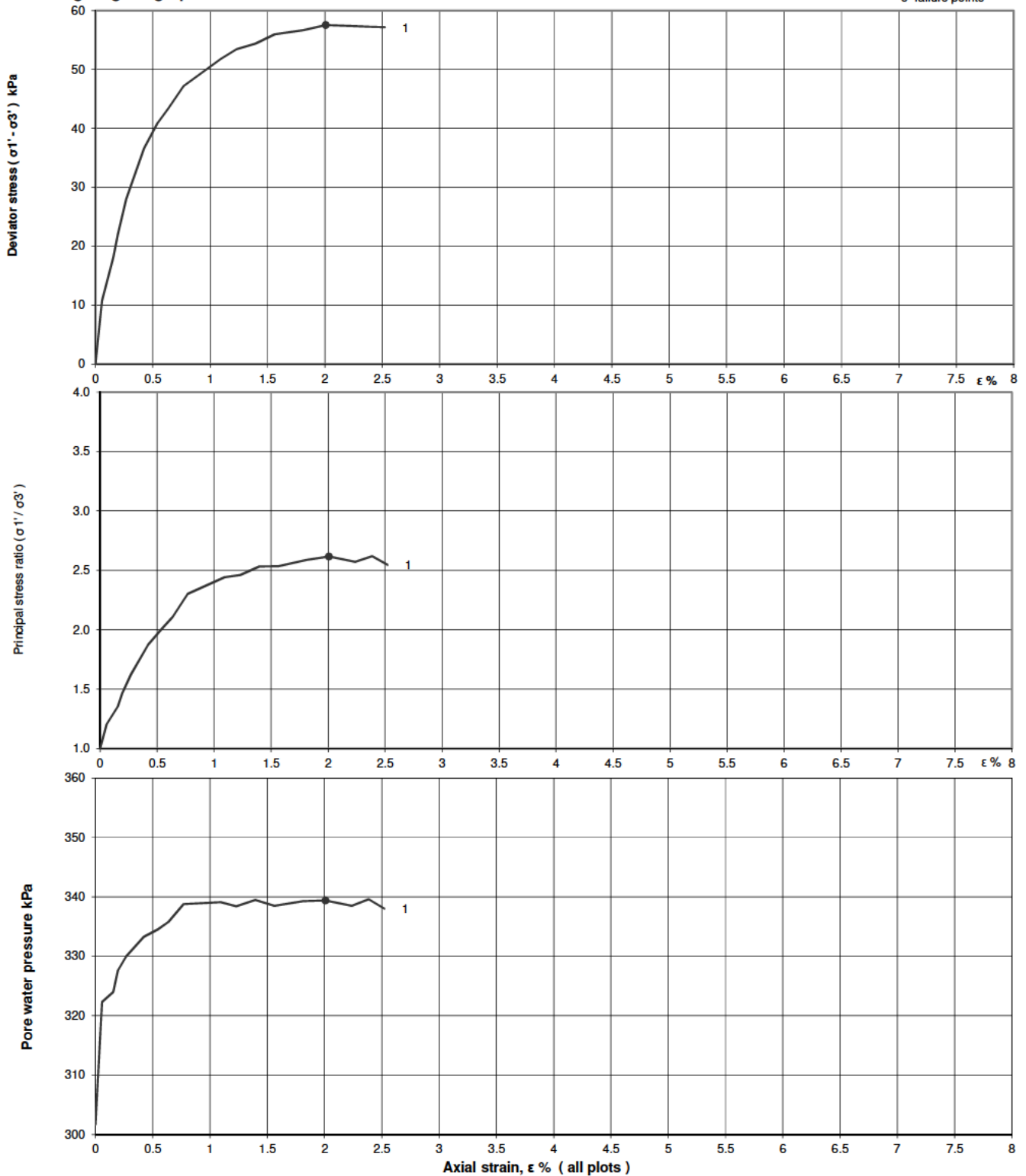
Drainage Conditions		From radial boundary and one end			
Consolidation Details	Specimen No.	1	2	3	
	Cell Pressure applied	375			kPa
	Back Pressure applied	300			kPa
	Effective Pressure	75			kPa
	Pore pressure at start of consolidation	355			kPa
	Pore pressure at end of consolidation	302			kPa
	Pore pressure dissipation at end of consolidation	97			%
Consolidation parameters (see note to BS1377 : pt 8, clause 6.3.4)	Coefficient of Consolidation	C _{vi}	0.58		m²/year
	Coefficient of Compressibility	M _{vi}	0.24		m²/MN
	Coefficient of Permeability (calculated)	k _{vi}	4.4E-11		m/s



Consolidated Undrained Triaxial Compression test with Measurement of Pore Water Pressure (BS1377 : Part 8 : 1990)

Project No	A9031-19	Sample Details:	Hole No		ATK-CP-11	
Project Name	HAVANT THICKET WATER STORAGE		Depth (m BGL)		6.00	
			No	27	Type	UT
			ID			
			Spec Ref			

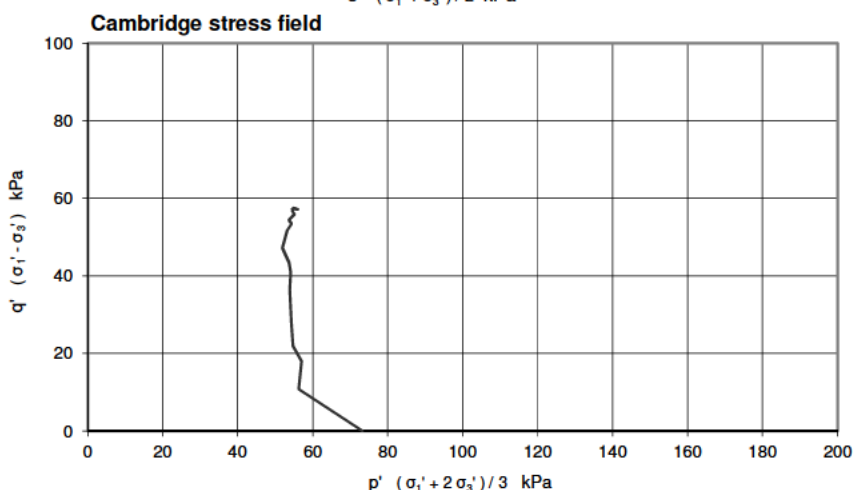
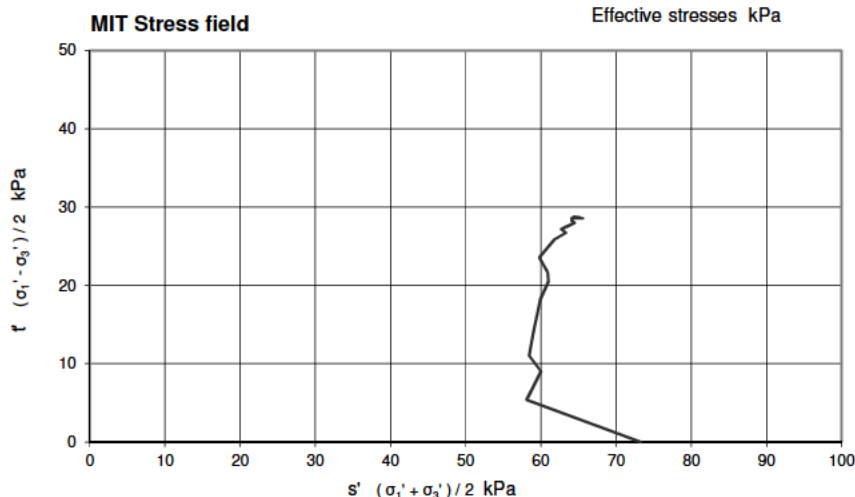
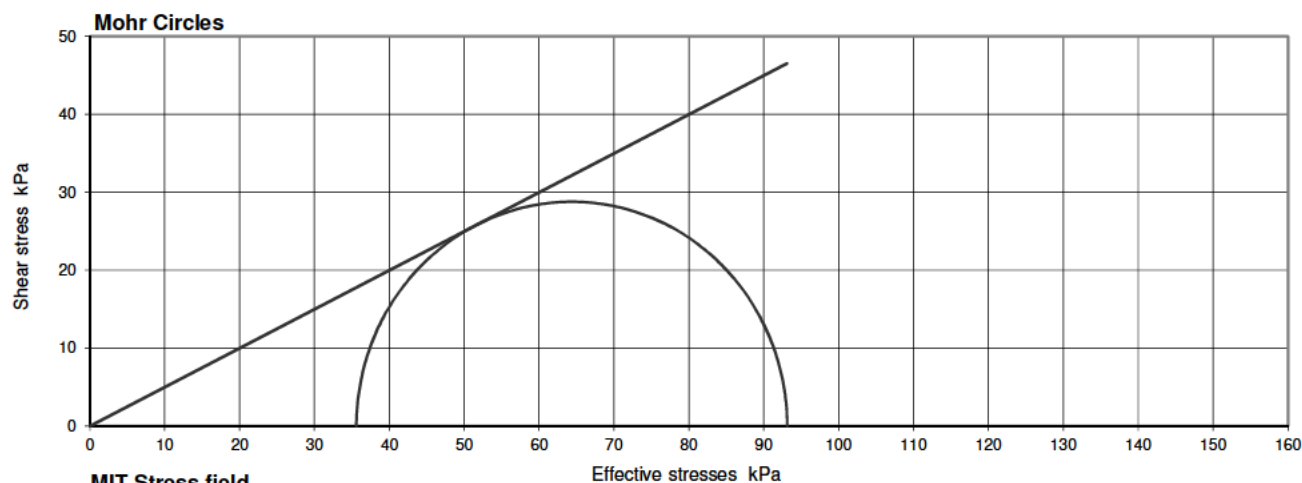
Shearing stages - graphical data



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Consolidated Undrained Triaxial Compression test with Measurement of Pore Water Pressure (BS1377 : Part 8 : 1990)

Project No	A9031-19	Sample Details:	Hole No	ATK-CP-11
Project Name	HAVANT THICKET WATER STORAGE		Depth (m BGL)	6.00
			No	27
			Type	UT
			ID	
			Spec Ref	



Compression stages

Specimen	1	2	3	
Cell pressure	375			kPa
Initial pwp	302			kPa
Initial σ_3'	73			kPa
Rate of strain	0.83			%/hr

Failure conditions

Criterion	Maximum deviator stress			
Axial strain	2.01			%
$(\sigma_1' / \sigma_3')_f$	2.616			
$(\sigma_1' - \sigma_3')_f$	57.5			kPa
u_f	339			kPa
$\sigma_3'_f$	36			kPa
$\sigma_1'_f$	93			kPa
A_f	0.66			
Time to failure	2.4			hrs

Shear Strength Parameters

		Linear regression
c'	kPa	0.0
ϕ'	degrees	26.5
		Manual re-assessment
c'	kPa	-
ϕ'	degrees	-

Mode of failure



Notes : Deviator stresses corrected for area change, vertical side drains and 0.329 mm thick rubber membrane(s)

Consolidated Undrained Triaxial Compression test with Measurement of Pore Water Pressure (BS1377 : Part 8 : 1990)

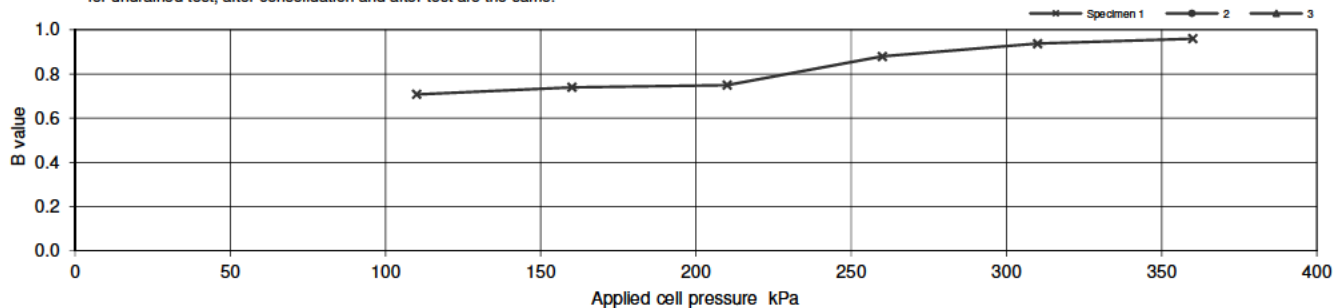
Project No	A9031-19	Sample Details:	Hole No	ATK-CP-15
Project Name	HAVANT THICKET WATER STORAGE		Depth (m BGL)	5.00
			No	21
			Type	UT
			ID	
			Spec Ref	

Specimen Details		1	2	3
Initial	Length mm	203.50		
	Diameter mm	103.58		
	Bulk Density Mg/m³	1.96		
	Water Content %	28		
	Dry density Mg/m³	1.53		
After consolidation	Length mm	205.08		
	Diameter mm	104.38		
	Bulk Density* Mg/m³	1.94		
	Water Content* %	30		
	Dry density* Mg/m³	1.50		

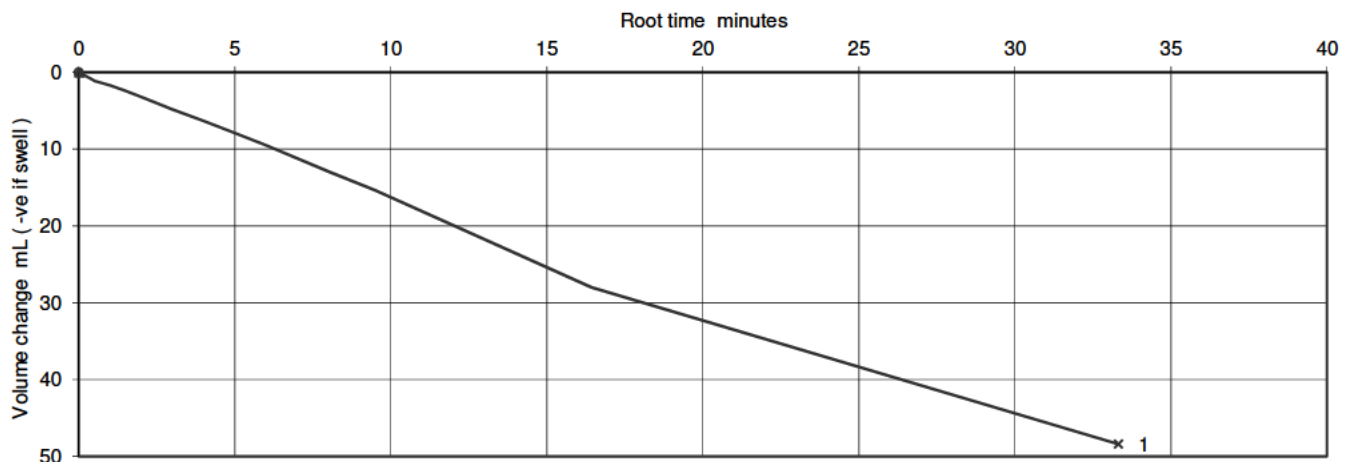
Soil Description	Firm greyish brown laminated CLAY. Laminæ are silt
Specimen Type /Preparation	UNDISTURBED

Saturation Details		Method of Saturation		
		Increments of cell and back pressure		
Cell pressure increments	kPa	50		
Differential Pressure	kPa	10		
Final Cell Pressure	kPa	360		
Final pore water pressure	kPa	344.8		
Final B Value		0.96		

* for undrained test, after consolidation and after test are the same.



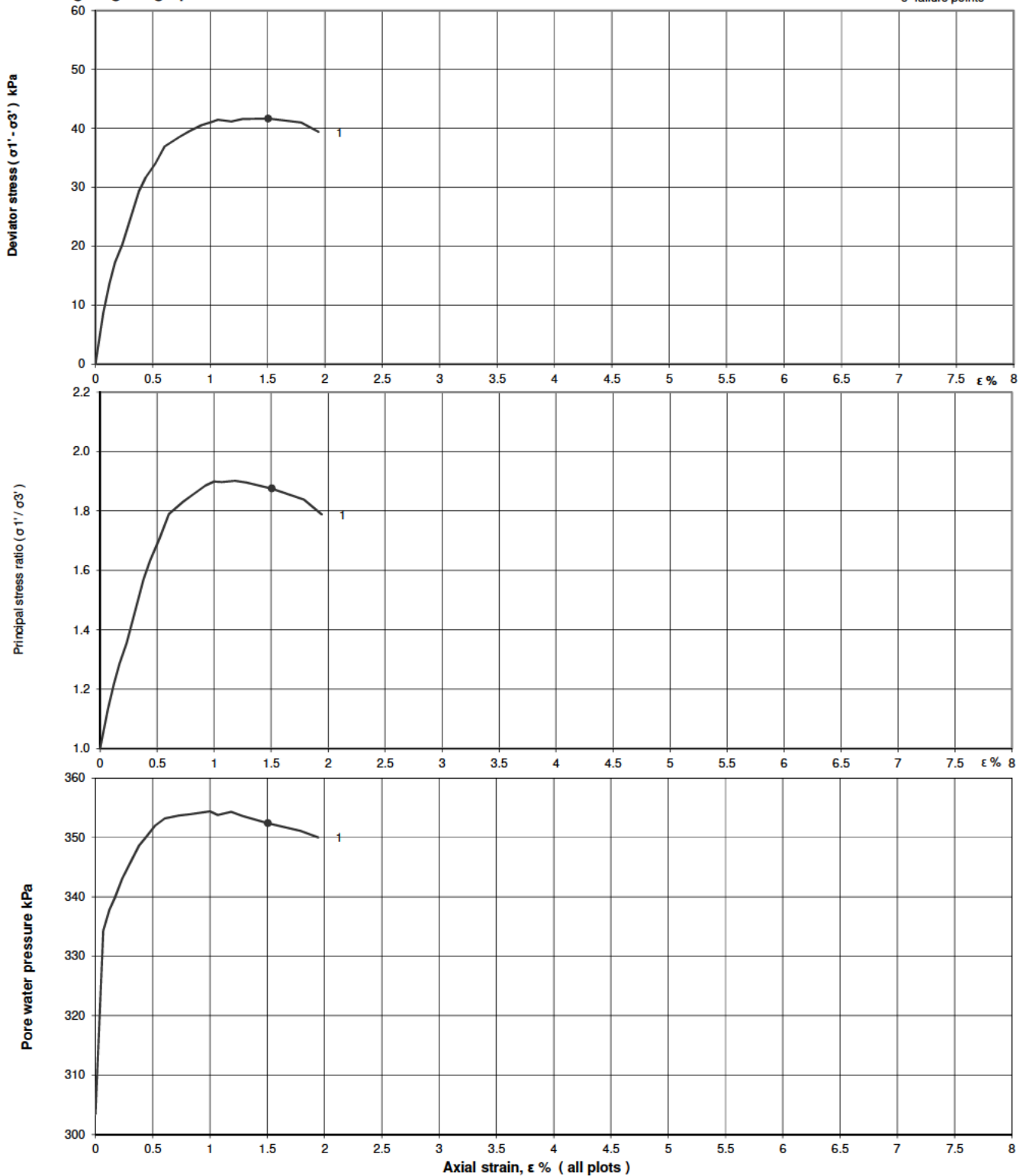
Drainage Conditions		From radial boundary and one end			
Specimen No.		1	2	3	
Consolidation Details	Cell Pressure applied	400			kPa
	Back Pressure applied	300			kPa
	Effective Pressure	100			kPa
	Pore pressure at start of consolidation	384			kPa
	Pore pressure at end of consolidation	304			kPa
	Pore pressure dissipation at end of consolidation	96			%
Consolidation parameters (see note to BS1377 : pt 8, clause 6.3.4)	Coefficient of Consolidation	C _{vi}	0.30		m²/year
	Coefficient of Compressibility	M _{vi}	0.34		m²/MN
	Coefficient of Permeability (calculated)	k _{vi}	3.2E-11		m/s



Consolidated Undrained Triaxial Compression test with Measurement of Pore Water Pressure (BS1377 : Part 8 : 1990)

Project No	A9031-19	Sample Details:	Hole No		ATK-CP-15	
Project Name	HAVANT THICKET WATER STORAGE		Depth (m BGL)		5.00	
			No	21	Type	UT
			ID			
			Spec Ref			

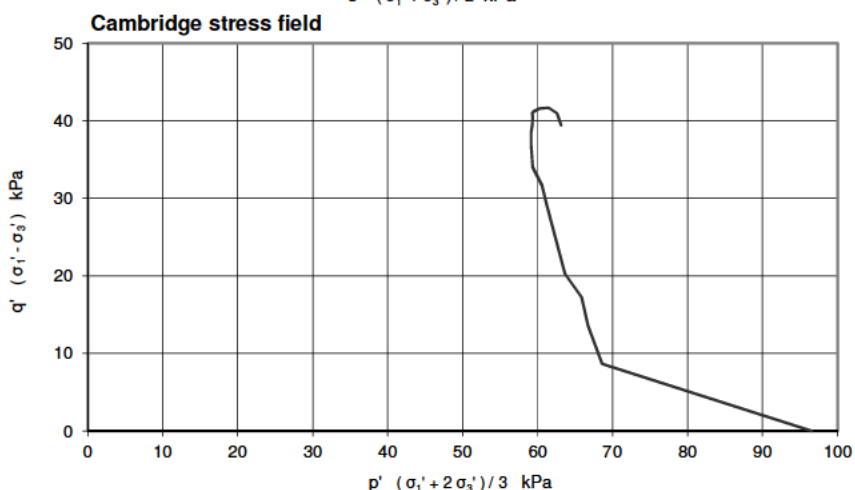
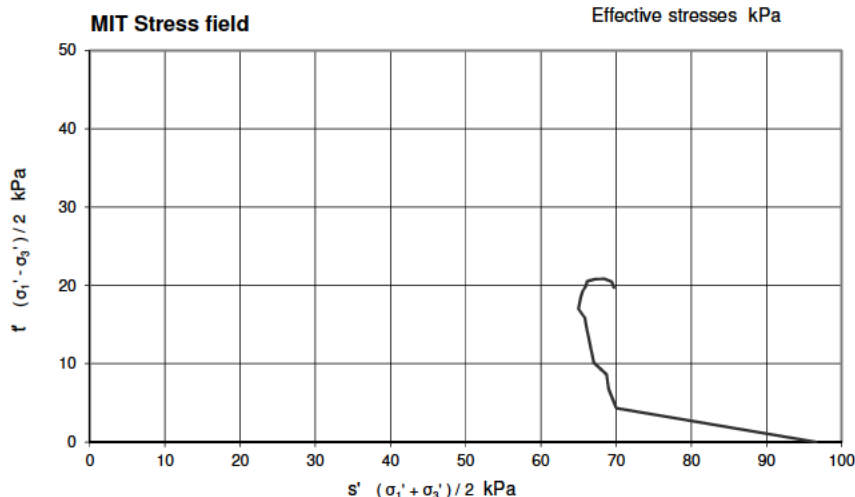
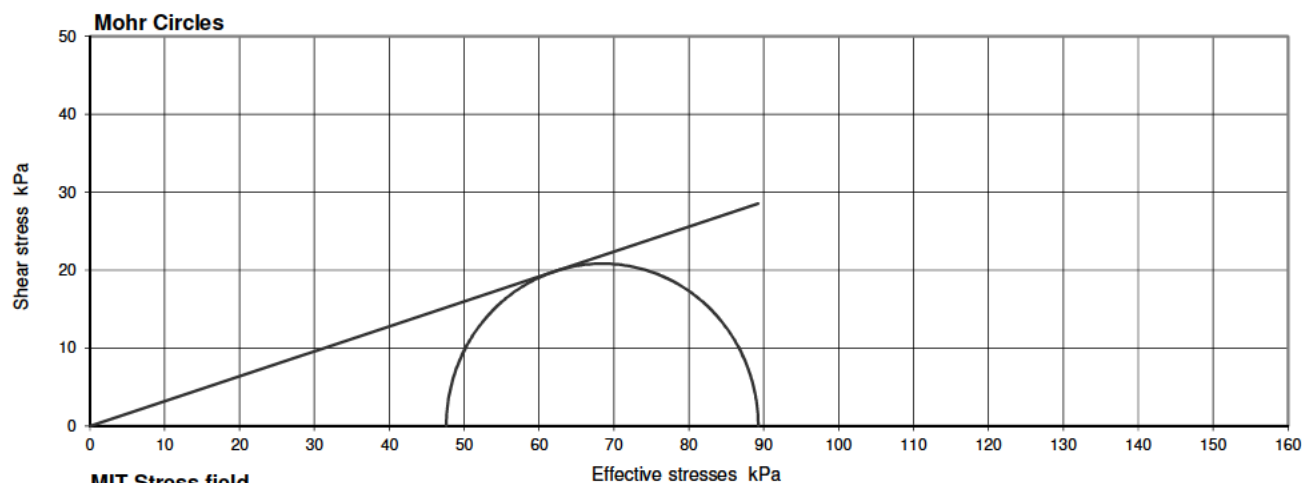
Shearing stages - graphical data



Ref SLR8.1 Rev 86.0 Feb18	 SOCOTEC	 UKAS TESTING 1157	Printed:15/01/2020 08:55	Figure CU sheet 2 of 3
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Consolidated Undrained Triaxial Compression test with Measurement of Pore Water Pressure (BS1377 : Part 8 : 1990)

Project No	A9031-19	Sample Details:	Hole No	ATK-CP-15
Project Name	HAVANT THICKET WATER STORAGE		Depth (m BGL)	5.00
			No	21
			Type	UT
			ID	
			Spec Ref	



Compression stages

Specimen	1	2	3
Cell pressure	400		
Initial pwp	303		
Initial σ_3'	97		
Rate of strain	0.43		

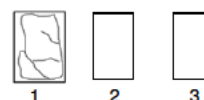
Failure conditions

Criterion	Maximum deviator stress		
Axial strain	1.51		%
$(\sigma_1' / \sigma_3')_f$	1.875		
$(\sigma_1' - \sigma_3')_f$	41.7		kPa
u_f	352		kPa
$\sigma_3'_f$	48		kPa
$\sigma_1'_f$	89		kPa
A_f	1.18		
Time to failure	3.5		hrs

Shear Strength Parameters

		Linear regression
c'	kPa	0.0
ϕ'	degrees	17.7
		Manual re-assessment
c'	kPa	-
ϕ'	degrees	-

Mode of failure



Notes : Deviator stresses corrected for area change, vertical side drains and 0.329 mm thick rubber membrane(s)

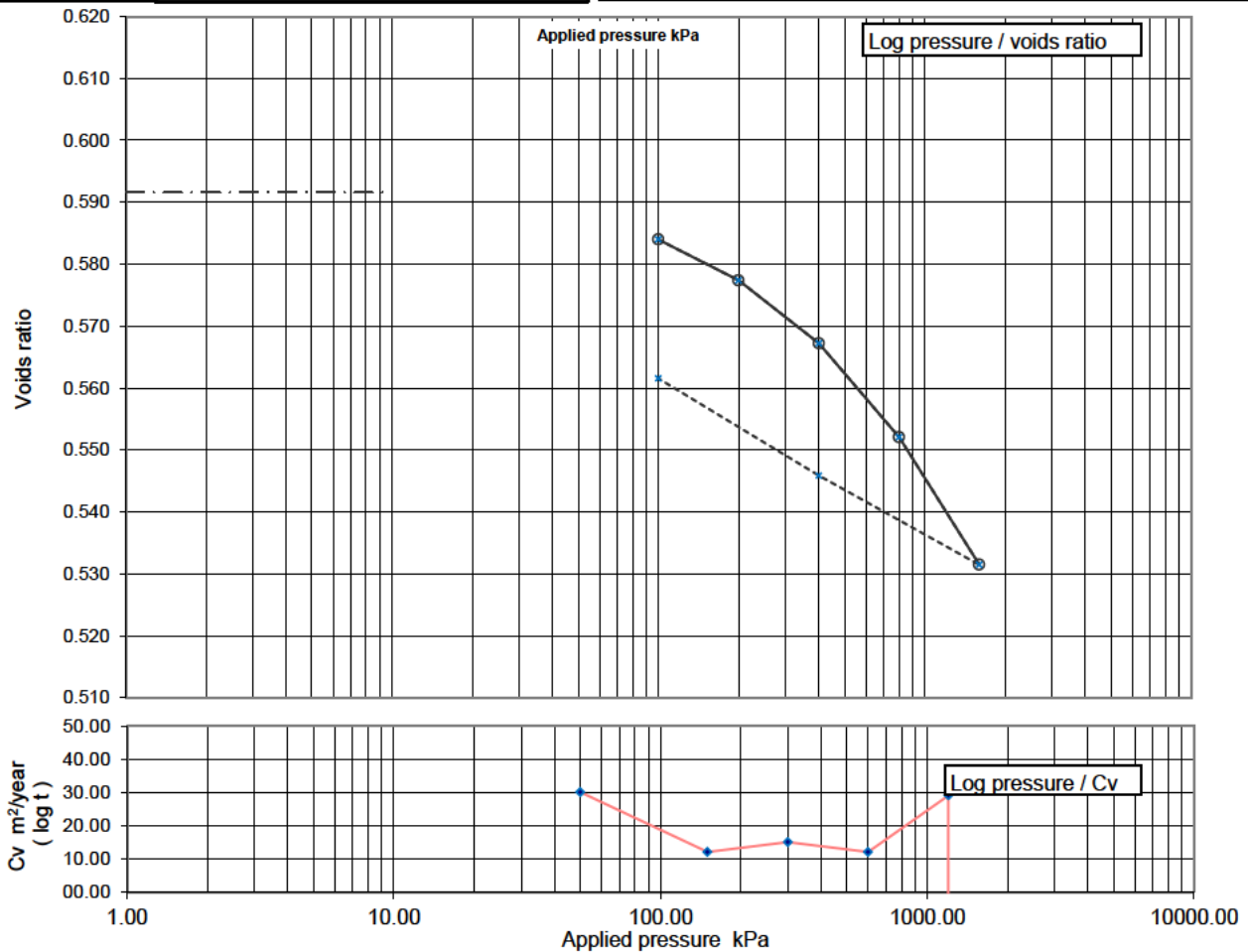
BS 1377 : Part 5 : 1990 : clause 3

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28/02/2020 09:02

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Sample Details:	SAMPLE ID:	Hole No	ATK-CP-02
	A9031-1920191114125018	Sample Depth (m BGL)	11.50 - 11.95
		Sample Type and No	UT37
		Specimen Ref	



Soil description

Stiff friable greyish brown slightly sandy silty CLAY.

Preparation

Undisturbed

Index properties

Liquid limit %		Plastic limit %	
----------------	--	-----------------	--

(if available)

Specimen details

Initial	Final	
2.74	assumed	Mg/m ³
74.99		mm
18.79	18.44	mm
0.592	0.562	
21	21	%
2.09	2.13	Mg/m ³
1.72	1.75	Mg/m ³
99	105	%
20		oC

Particle density

Diameter

Height

Voids ratio

Moisture content

Bulk density

Dry density

Saturation

Average temperature for test

Swelling pressure

not measured	kPa
--------------	-----

Notes :

[illegible]

Specimen taken 100 mm from base of sample

QA Ref
SLR 5.3
Rev 2.21
Feb 19



Project No

A9031-19

Project Name

HAVANT THICKET WATER STORAGE

Figure

OED

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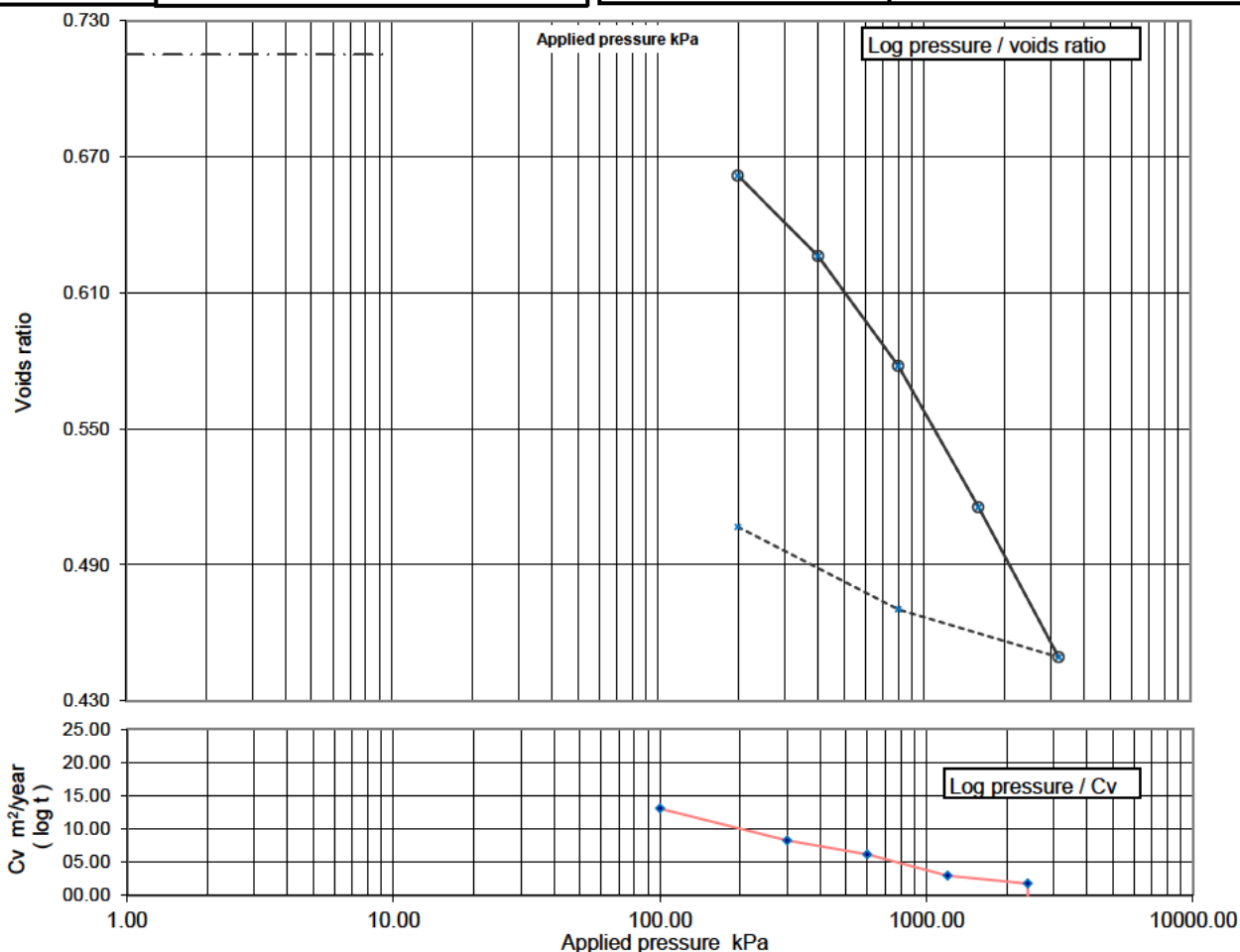
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Sample Details:	SAMPLE ID:	Hole No	ATK-CP-04
	A9031-1920191119084456	Sample Depth (m BGL)	6
		Sample Type and No	UT26
		Specimen Ref	



Soil description

Firm to stiff greyish brown slightly sandy silty CLAY.

Preparation

Undisturbed

Index properties

Liquid limit %		Plastic limit %	
----------------	--	-----------------	--

(if available)

Specimen details

Initial	Final	
2.65	assumed	Mg/m3
74.95		mm
18.97	16.67	mm
0.715	0.507	
26	20	%
1.95	2.11	Mg/m3
1.55	1.76	Mg/m3
97	105	%
20		oC

Average temperature for test

Swelling pressure

not measured	kPa
--------------	-----

Notes :

[illegible]

Specimen taken 60 mm from base of sample

QA Ref
SLR 5.3
Rev 2.21
Feb 19



Project No	A9031-19
Project Name	HAVANT THICKET WATER STORAGE

Figure

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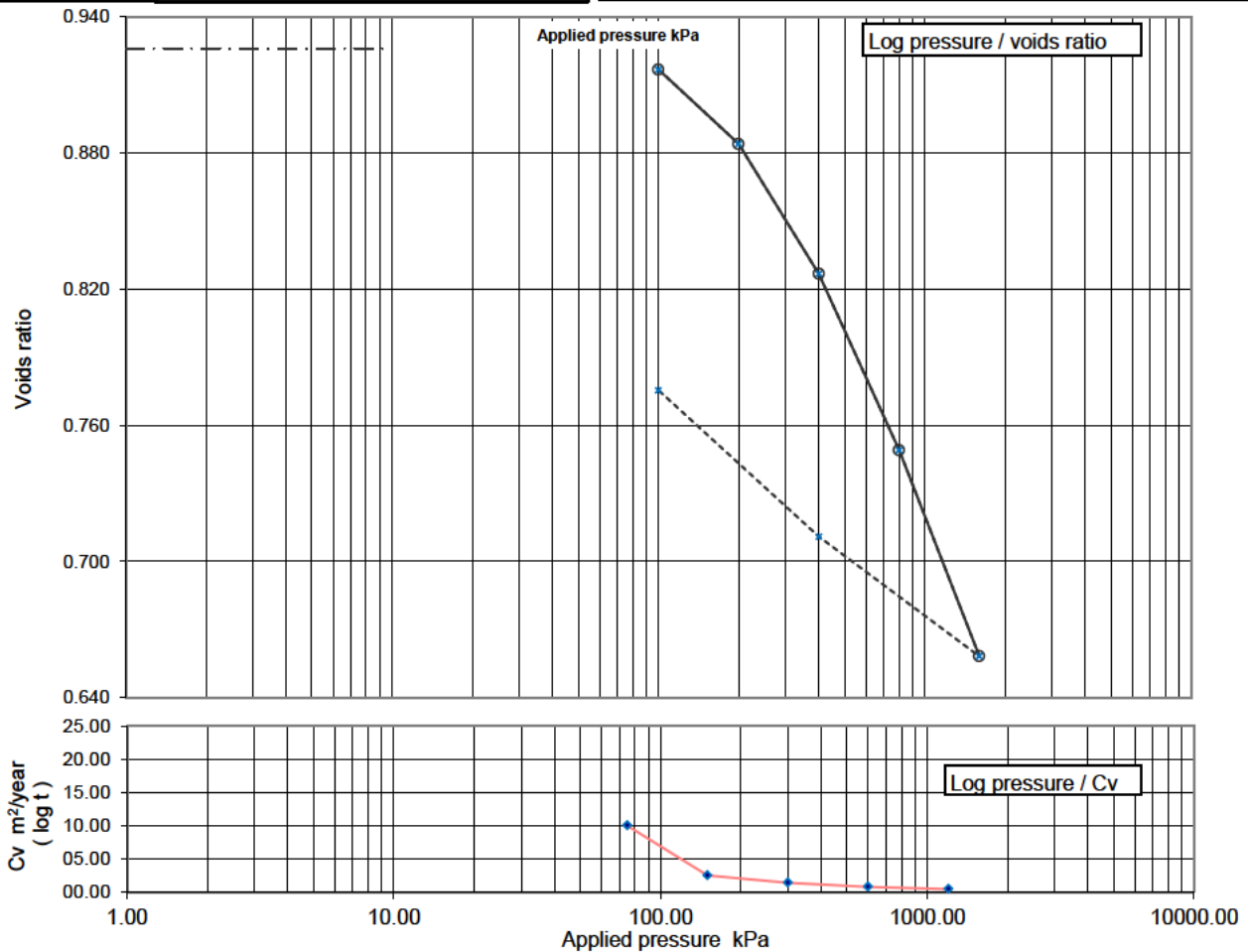
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BS 1377 : Part 5 : 1990 : clause 3

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-05
	A9031-1920191121113644	Sample Depth (m BGL)	2
		Sample Type and No	UT11
		Specimen Ref	



Soil description

Firm to stiff greyish brown mottled orangish brown slightly sandy CLAY with occasional mica fragmnets.

Preparation

Undisturbed

Index properties

Liquid limit %		Plastic limit %	
----------------	--	-----------------	--

(if available)

Specimen details

Initial	Final	
2.65	assumed	Mg/m3
75.02		mm
18.84	17.37	mm
0.926	0.775	
35	31	%
1.85	1.95	Mg/m3
1.38	1.49	Mg/m3
99	105	%
20		oC

Average temperature for test

Swelling pressure

>50 kPa

Notes :

[illegible]

Specimen taken 90 mm from base of sample

QA Ref
SLR 5.3
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Feb 19



Project No	A9031-19
Project Name	HAVANT THICKET WATER STORAGE

Figure

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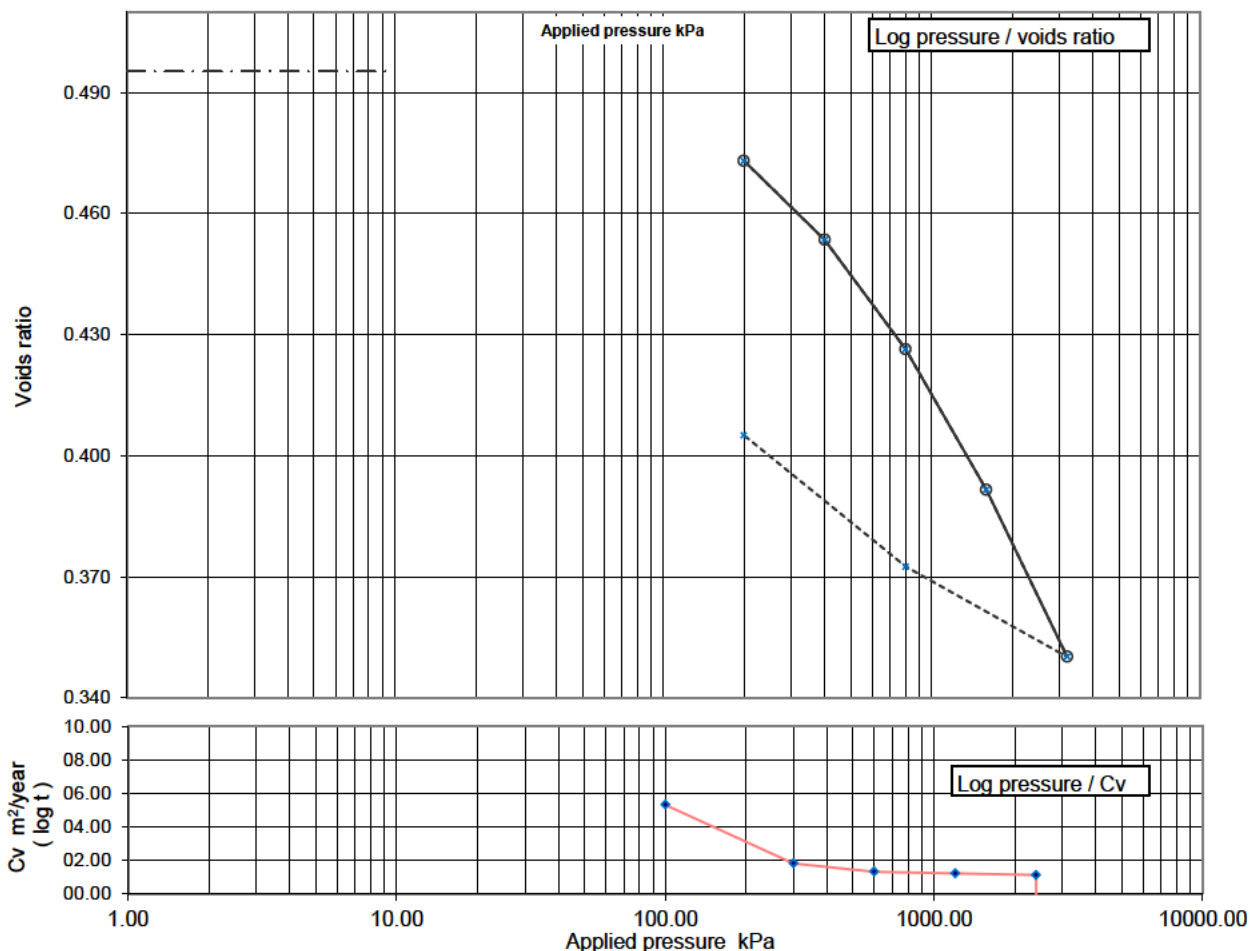
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BS 1377 : Part 5 : 1990 : clause 3

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-05
	A9031-1920191122125000	Sample Depth (m BGL)	14.5
		Sample Type and No	UT55
		Specimen Ref	



Soil description

Firm to stiff light brownish grey mottled reddish brown slightly sandy silty CLAY.

Preparation

Undisturbed

Index properties

Liquid limit %		Plastic limit %	
----------------	--	-----------------	--

(if available)

Specimen details

Initial	Final	
2.75	assumed	Mg/m3
74.95		mm
18.89	17.75	mm
0.495	0.405	
18	15	%
2.17	2.26	Mg/m3
1.84	1.96	Mg/m3
100	105	%
20		oC

Particle density

Diameter

Height

Voids ratio

Moisture content

Bulk density

Dry density

Saturation

Average temperature for test

Swelling pressure

not measured	kPa
--------------	-----

Notes :

[illegible]

Specimen taken 70 mm from base of sample

QA Ref
SLR 5.3
Rev 2.21
Feb 19



Project No	A9031-19
Project Name	HAVANT THICKET WATER STORAGE

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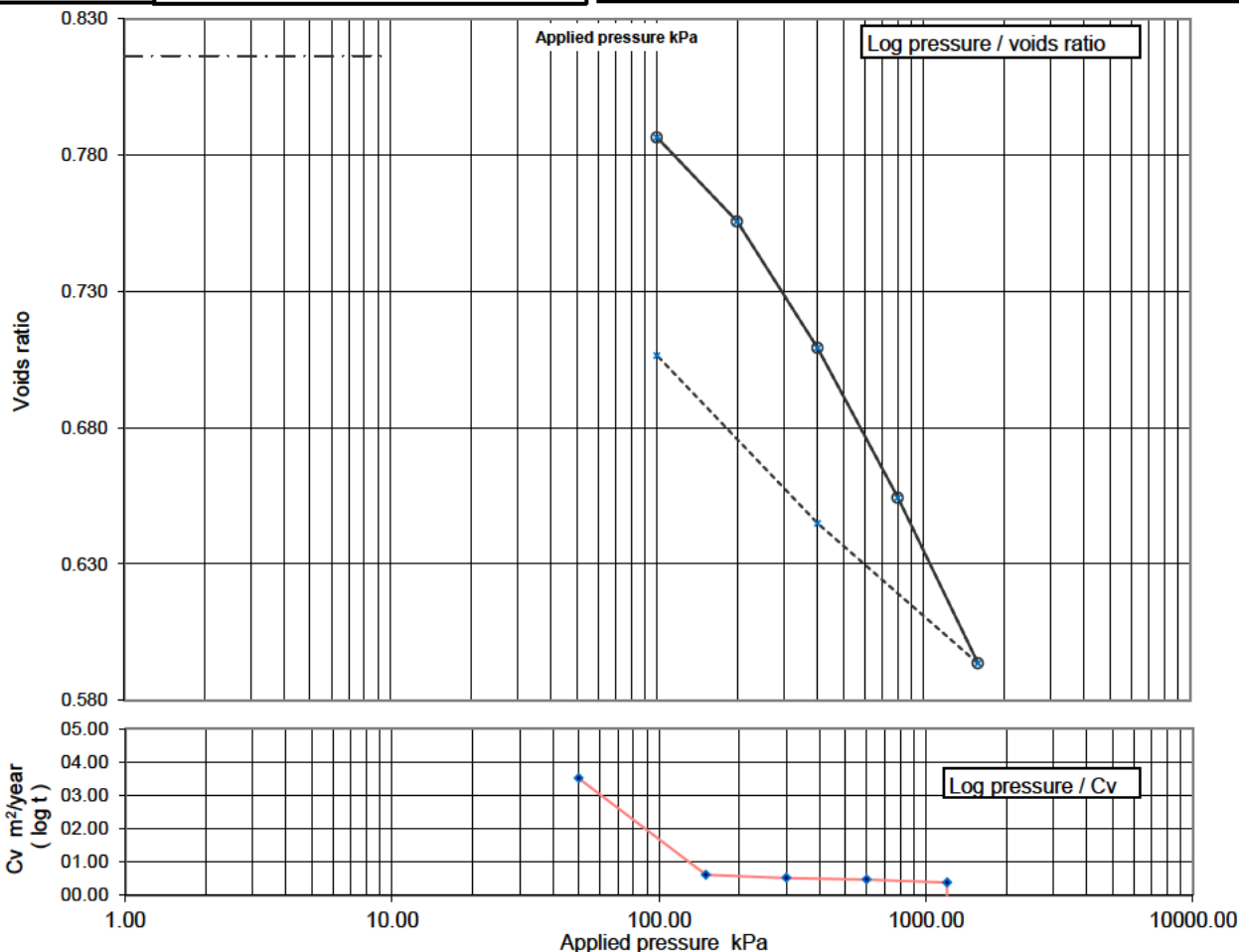
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ONE DIMENSIONAL CONSOLIDATION TEST

BS 1377 : Part 5 : 1990 : clause 3

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-11
	A9031-1920191219105028	Sample Depth (m BGL)	4
		Sample Type and No	UT19
		Specimen Ref	



Soil description

Firm to stiff greyish brown slightly sandy CLAY

Preparation

Undisturbed

Index properties

Liquid limit %		Plastic limit %	
----------------	--	-----------------	--

(if available)

Specimen details

Particle density

Diameter

Height

Voids ratio

Moisture content

Bulk density

Dry density

Saturation

Average te

Swelling pressure

not measured	kPa
--------------	-----

Notes :

[illegible]

Specimen taken 0 mm from base of sample

QA Ref
SLR 5.3
Rev 2.21
Feb 19



SOCOTEC

Project No

A9031-19

Project Name

HAVANT THICKET WATER STORAGE

Figure

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BS 1377 : Part 5 : 1990 : clause 3

The figure consists of two vertically stacked plots sharing a common x-axis representing Applied pressure in kPa on a logarithmic scale from 1.00 to 10000.00.

Top Plot: The y-axis represents Voids ratio, ranging from 0.580 to 0.830. It shows two data series: a solid line with circular markers labeled 'Log pressure / voids ratio' and a dashed line with cross markers labeled 'Log pressure / voids ratio'. The solid line starts at approximately (100, 0.785) and ends at (1500, 0.59). The dashed line starts at approximately (100, 0.69) and ends at (1500, 0.58).

Bottom Plot: The y-axis represents C_v m²/year (log t), ranging from 0.00 to 25.00. It shows a single data series with a solid red line and circular markers labeled 'Log pressure / C_v '. The data points start at approximately (50, 15) and drop sharply to near zero by 100 kPa, remaining at zero for higher pressures up to 1500 kPa.

Firm to stiff dark greyish brown silty CLAY.

Indisturbed	
-------------	--

Liquid limit %		Plastic limit %	
----------------	--	-----------------	--

Notes :

not measured	kPa
--------------	-----

Specimen taken 90 mm from base of sample



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**Determination of Permeability in a Triaxial Cell
(BS1377 : Part 6 : 1990, clause 6 - Constant Head test)**

Project No	A9031-19	Sample Details:	Hole No.	ATK-CP-02		
Project Name	HAVANT THICKET WATER STORAGE		Depth (m BGL)	2.50-3.00		
			Sample No	8	Type	B
			ID			
			Spec Ref			

Specimen Details

Soil Description Brown clayey SAND.

Specimen Type RECOMPACTED using 4.5kg effort at as received
/Preparation moisture content.

Length 98.0 mm

Diameter 102.0 mm

Particle density 2.65 Mg/m³ Assumed

Bulk Density

Water Content

Dry density

Voids ratio

Degree of saturation

Initial

Final

2.04 2.13 Mg/m³

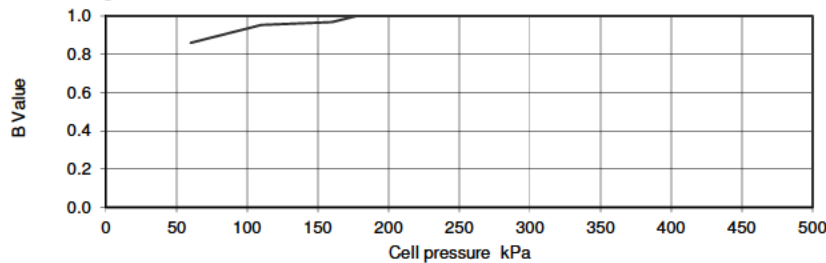
27.0 23.9 %

1.61 1.72 Mg/m³

0.65 0.54

110 117 %

Saturation Stage



Method:

Increments of cell pressure only

Cell pressure increments 50 kPa

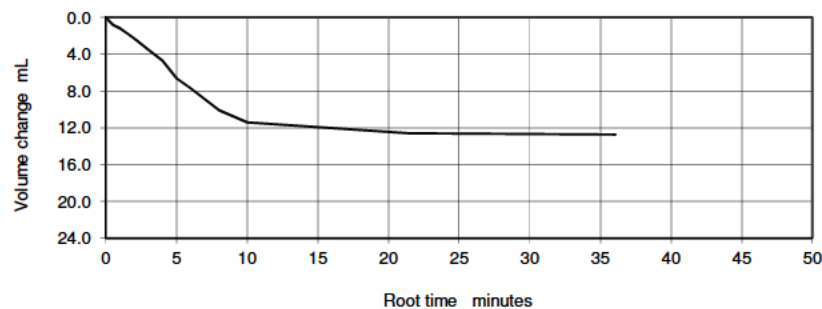
Differential Pressure 0 kPa

Final Cell Pressure 210 kPa

Final pore water pressure 201 kPa

Final B Value 1.00

Consolidation Stage



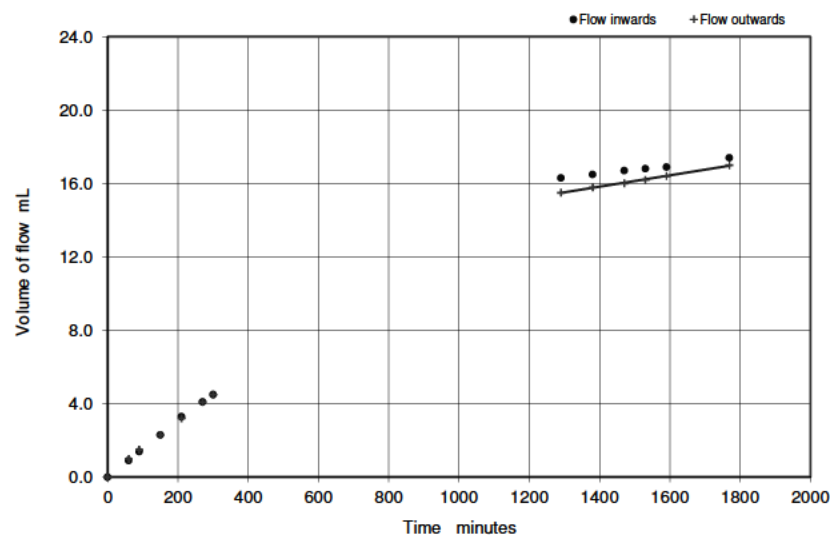
Drainage Condition to one end only

Cell pressure applied 360 kPa

Back pressure applied 300 kPa

Effective stress 60 kPa

Permeability Stage



Cell Pressure 365 kPa

Top Pressure 300 kPa

Base Pressure 310 kPa

Mean Effective Stress 60 kPa

Differential Pressure 10 kPa

Hydraulic gradient 10

Mean rate of flow 0.00309 ml/min

Temperature during test 20 °C

PERMEABILITY, k_v

-10
(at 20°C) **6.0 x 10** m/s

Notes

Ref SLR6.6 Rev 2.0 Feb18	  1157	Printed:29/01/2020 16:14 © Copyright 2017 SOCOTEC UK Limited. All rights reserved	Figure TXLP 1 sheet 1 of 1
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Determination of Permeability in a Triaxial Cell (BS1377 : Part 6 : 1990, clause 6 - Constant Head test)

Project No	A9031-19	Sample Details:	Hole No.	ATK-CP-08		
Project Name	HAVANT THICKET WATER STORAGE		Depth (m BGL)	0.50-1.00		
			Sample No	4	Type	B
			ID			
			Spec Ref			

Specimen Details

Soil Description Soft brown slightly sandy CLAY.

Specimen Type /Preparation RECOMPACTED using 4.5kg effort at as received moisture content.

Length 98.7 mm

Diameter 103.4 mm

Particle density 2.65 Mg/m³ Assumed

Bulk Density Initial 1.89 Final 1.99 Mg/m³

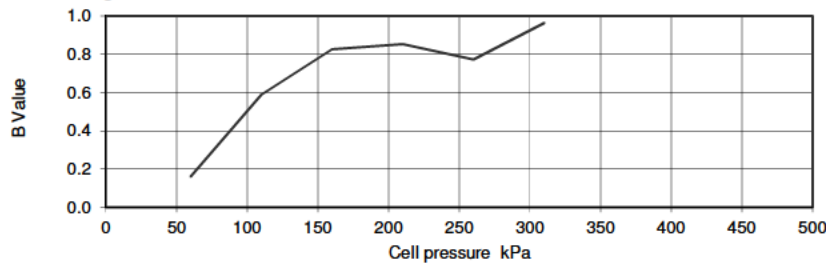
Water Content 32.7 31.6 %

Dry density 1.43 1.51 Mg/m³

Voids ratio 0.86 0.75

Degree of saturation 101 111 %

Saturation Stage



Method:

Increments of cell and back pressure

Cell pressure increments 50 kPa

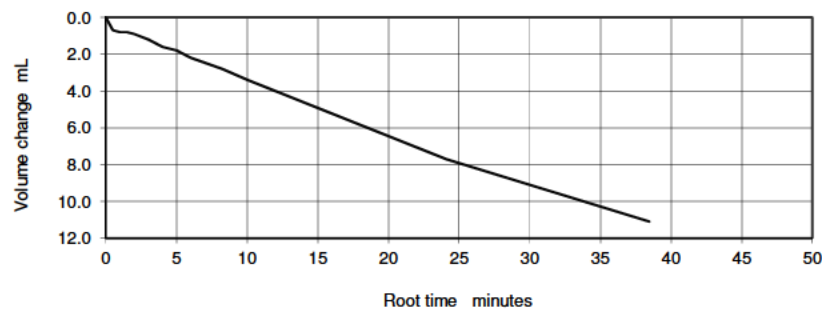
Differential Pressure 10 kPa

Final Cell Pressure 310 kPa

Final pore water pressure 296 kPa

Final B Value 0.96

Consolidation Stage



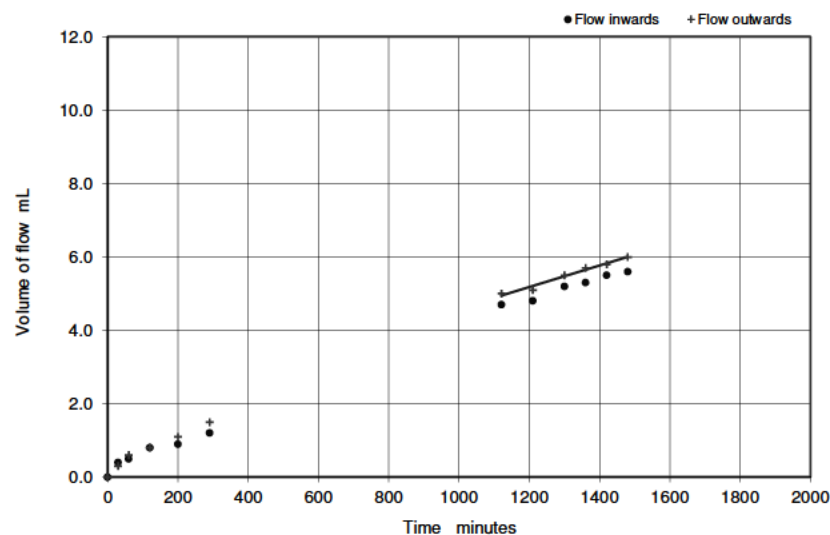
Drainage Condition

Cell pressure applied 325 kPa

Back pressure applied 300 kPa

Effective stress 25 kPa

Permeability Stage



Cell Pressure 330 kPa

Top Pressure 300 kPa

Base Pressure 310 kPa

Mean Effective Stress 25 kPa

Differential Pressure 10 kPa

Hydraulic gradient 10

Mean rate of flow 0.00293 ml/min

Temperature during test 20 °C

PERMEABILITY, k_v

(at 20°C) 5.6×10^{-10} m/s

Notes

Ref SLR6.6 Rev 2.0 Feb18	 	Printed:29/01/2020 16:15	Figure TXLP 1 sheet 1 of 1
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Determination of Permeability in a Triaxial Cell (BS1377 : Part 6 : 1990, clause 6 - Constant Head test)

Project No	A9031-19	Sample Details:	Hole No.	ATK-CP -09		
Project Name	HAVANT THICKET WATER STORAGE		Depth (m BGL)	1.65-2.20		
			Sample No	8	Type	B
			ID			
			Spec Ref			

Specimen Details

Soil Description Stiff brown slightly gravelly slightly clayey SAND.

Specimen Type RECOMPACTED using 4.5kg effort at as received
/Preparation moisture content.

Length 90.3 mm

Diameter 102.2 mm

Particle density 2.65 Mg/m³ Assumed

Bulk Density

Water Content

Dry density

Voids ratio

Degree of saturation

Initial

Final

2.00 2.26 Mg/m³

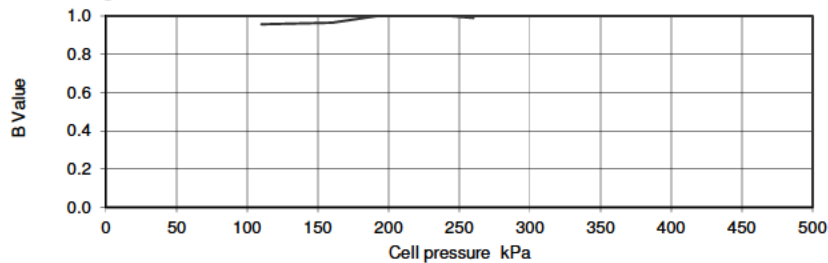
29.8 26.9 %

1.54 1.78 Mg/m³

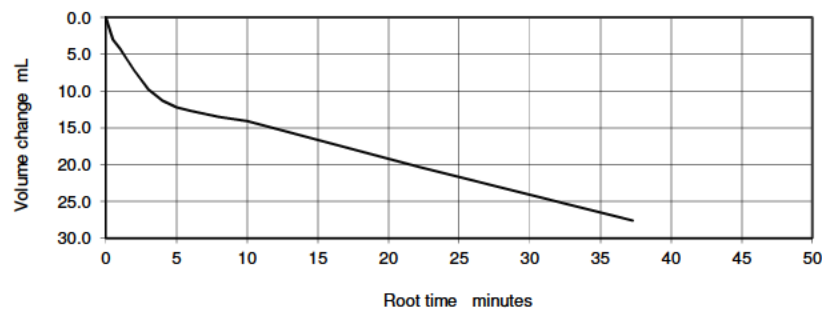
0.72 0.49

110 147 %

Saturation Stage



Consolidation Stage



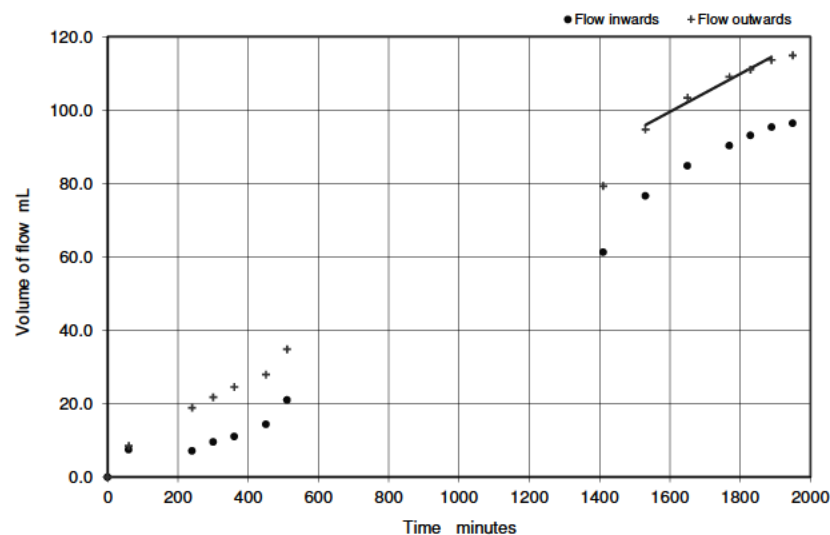
Drainage Condition to one end only

Cell pressure applied 340 kPa

Back pressure applied 300 kPa

Effective stress 40 kPa

Permeability Stage



Cell Pressure 345 kPa

Top Pressure 300 kPa

Base Pressure 310 kPa

Mean Effective Stress 40 kPa

Differential Pressure 10 kPa

Hydraulic gradient 11

Mean rate of flow 0.05155 ml/min

Temperature during test °C

PERMEABILITY, k_v

(at 20°C) **1.3** m/s

Notes

Ref SLR6.6 Rev 2.0 Feb18	 	Printed:29/01/2020 16:13	Figure TXLP 1 sheet 1 of 1
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Determination of Permeability in a Triaxial Cell (BS1377 : Part 6 : 1990, clause 6 - Constant Head test)

Project No	A9031-19	Sample Details:	Hole No.	ATK-RC-02		
Project Name	HAVANT THICKET WATER STORAGE		Depth (m BGL)	2.00-2.50		
			Sample No	12	Type	B
			ID			
			Spec Ref			

Specimen Details

Soil Description Brown slightly clayey SAND.

Specimen Type /Preparation RECOMPACTED using 4.5Kg effort at as received moisture content.

Length 93.8 mm

Diameter 103.4 mm

Particle density 2.70 Mg/m³ Assumed

Bulk Density

Water Content

Dry density

Voids ratio

Degree of saturation

Initial

Final

2.00 2.17 Mg/m³

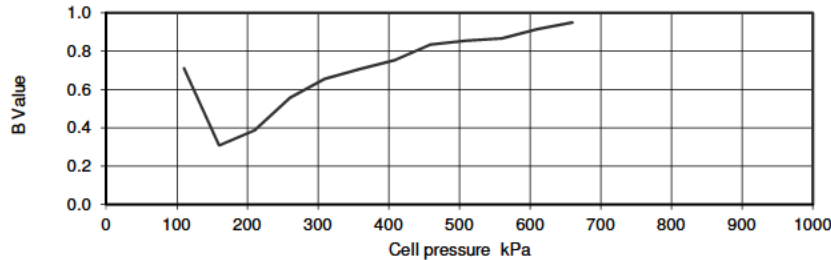
22.0 22.6 %

1.64 1.77 Mg/m³

0.65 0.53

92 115 %

Saturation Stage



Method:

Increments of cell and back pressure

Cell pressure increments 50 kPa

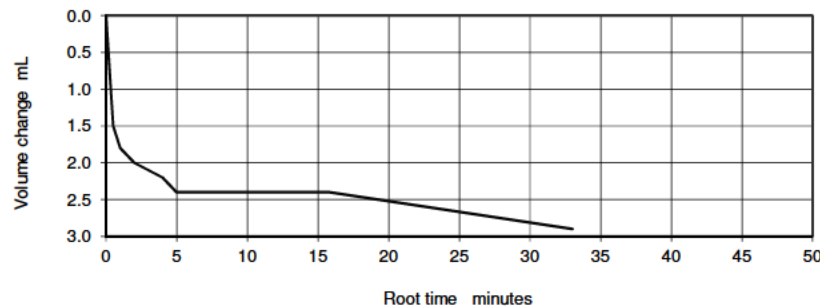
Differential Pressure 10 kPa

Final Cell Pressure 660 kPa

Final pore water pressure 600 kPa

Final B Value 0.95

Consolidation Stage



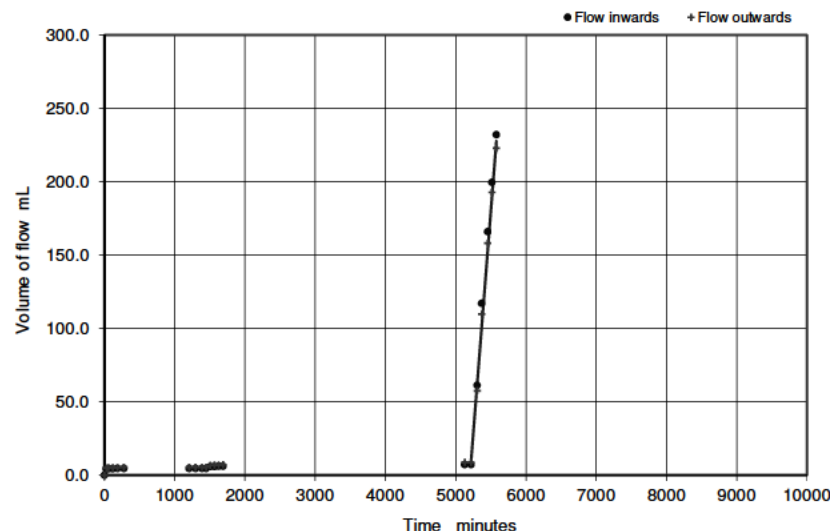
Drainage Condition to one end only

Cell pressure applied 700 kPa

Back pressure applied 650 kPa

Effective stress 50 kPa

Permeability Stage



Cell Pressure 705 kPa

Top Pressure 640 kPa

Base Pressure 670 kPa

Mean Effective Stress 50 kPa

Differential Pressure 30 kPa

Hydraulic gradient 33

Mean rate of flow 0.60556 ml/min

Temperature during test 20 °C

PERMEABILITY, k_v

(at 20°C) 3.7×10^{-8} m/s

Notes Differential pressure increased to 30kPa after 5220 minutes due to insufficient flow.
Sample noted as very wet.

Ref	SLR6.6 Rev 2.0 Feb18	 	Printed:17/02/2020 11:24	Figure TXLP sheet 1 of 1
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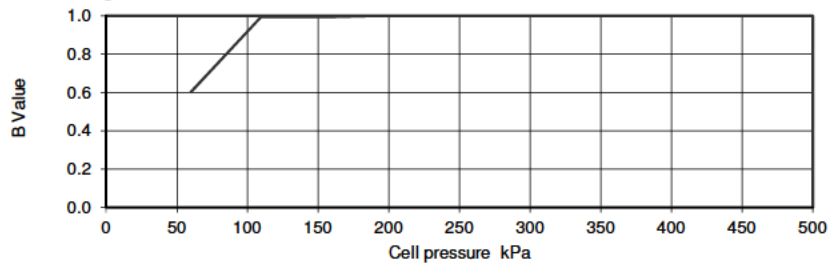
**Determination of Permeability in a Triaxial Cell
(BS1377 : Part 6 : 1990, clause 6 - Constant Head test)**

Project No	A9031-19	Sample Details:	Hole No.	ATK-RC-02		
Project Name	HAVANT THICKET WATER STORAGE		Depth (m BGL)	4.00-4.50		
			Sample No	20	Type	B
			ID			
			Spec Ref			

Specimen Details

Soil Description	Brown clayey SAND				
Specimen Type /Preparation	RECOMPACTED using 4.5kg effort at as received moisture content.		Bulk Density	2.06	2.13 Mg/m³
Length	96.8 mm		Water Content	27.7	22.8 %
Diameter	101.0 mm		Dry density	1.61	1.73 Mg/m³
Particle density	2.75 Mg/m³	Assumed	Voids ratio	0.71	0.59
			Degree of saturation	108	107 %

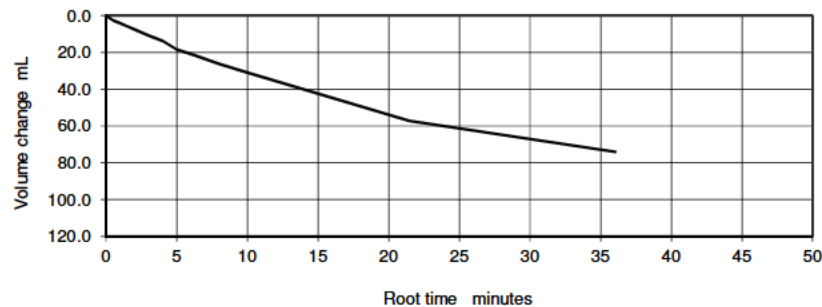
Saturation Stage



Method:

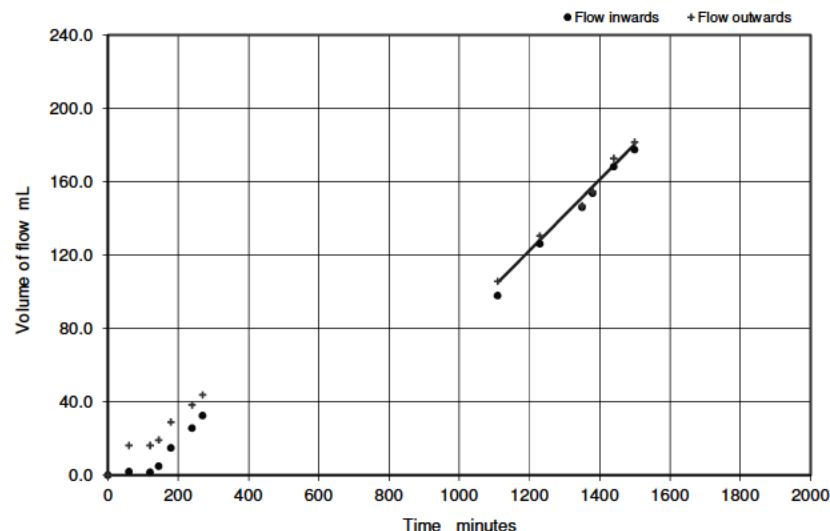
Increments of cell pressure only	
Cell pressure increments	50 kPa
Differential Pressure	0 kPa
Final Cell Pressure	210 kPa
Final pore water pressure	186 kPa
Final B Value	1.00

Consolidation Stage



Drainage Condition	to one end only
Cell pressure applied	380 kPa
Back pressure applied	300 kPa
Effective stress	80 kPa

Permeability Stage



Cell Pressure	385 kPa
Top Pressure	285 kPa
Base Pressure	325 kPa
Mean Effective Stress	80 kPa
Differential Pressure	40 kPa
Hydraulic gradient	42

Mean rate of flow	0.19349 ml/min
Temperature during test	20 °C

PERMEABILITY, k_v	
(at 20°C)	9.5×10^{-9} m/s

Notes H.G = 10kPa increasing to 20kPa due to insufficient flow

Ref SLR6.6 Rev 2.0 Feb18	  1157	Printed:17/02/2020 12:05	Figure TXLP sheet 1 of 1
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**Determination of Permeability in a Triaxial Cell
(BS1377 : Part 6 : 1990, clause 6 - Constant Head test)**

Project No	A9031-19	Sample Details:	Hole No.	ATK-TP-05		
Project Name	HAVANT THICKET WATER STORAGE		Depth (m BGL)	0.40-0.50		
			Sample No	3	Type	B
			ID			
			Spec Ref			

Specimen Details

Soil Description Soft brown sandy CLAY.

Specimen Type RECOMPACTED using 4.5kg effort at as received
/Preparation moisture content.

Length 98.6 mm

Diameter 101.0 mm

Particle density 2.65 Mg/m³ Assumed

Bulk Density

Water Content

Dry density

Voids ratio

Degree of saturation

Initial

Final

2.02 2.04 Mg/m³

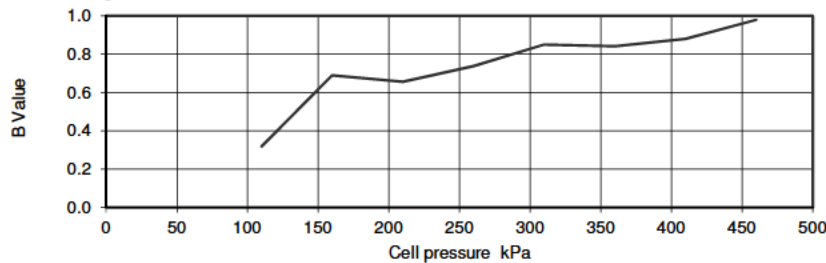
26.1 24.9 %

1.60 1.64 Mg/m³

0.65 0.62

106 106 %

Saturation Stage



Method:

Increments of cell and back pressure

Cell pressure increments 50 kPa

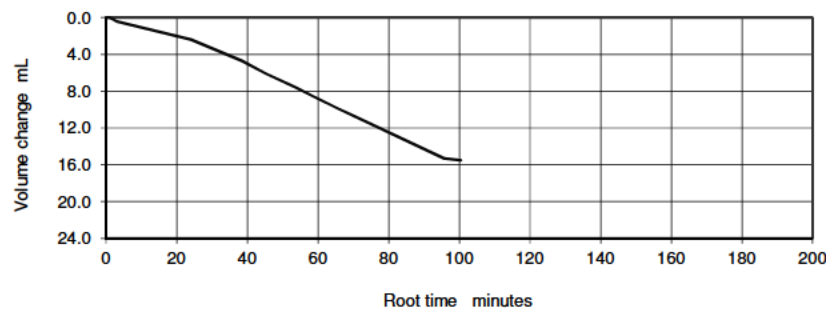
Differential Pressure 10 kPa

Final Cell Pressure 460 kPa

Final pore water pressure 442 kPa

Final B Value 1.00

Consolidation Stage



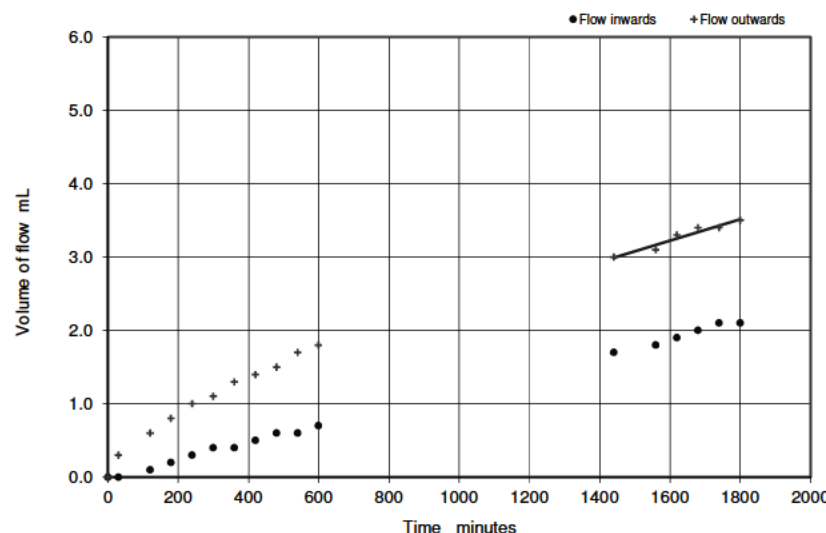
Drainage Condition to one end only

Cell pressure applied 475 kPa

Back pressure applied 450 kPa

Effective stress 25 kPa

Permeability Stage



Cell Pressure 480 kPa

Top Pressure 450 kPa

Base Pressure 460 kPa

Mean Effective Stress 25 kPa

Differential Pressure 10 kPa

Hydraulic gradient 10

Mean rate of flow 0.00145 ml/min

Temperature during test 19.7 °C

PERMEABILITY, k_v

(at 20°C) 2.9×10^{-10} m/s

Notes H.G=10kPa

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Determination of Permeability in a Triaxial Cell (BS1377 : Part 6 : 1990, clause 6 - Constant Head test)

Project No	A9031-19	Sample Details:	Hole No.	ATK-TP-05		
Project Name	HAVANT THICKET WATER STORAGE		Depth (m BGL)	0.90-1.00		
			Sample No	6	Type	B
			ID			
			Spec Ref			

Specimen Details

Soil Description Soft brown very sandy CLAY.

Specimen Type /Preparation RECOMPACTED using 4.5kg effort at as received moisture content.

Length 96.1 mm

Diameter 101.3 mm

Particle density 2.70 Mg/m³ Assumed

Bulk Density

Water Content

Dry density

Voids ratio

Degree of saturation

Initial

Final

1.96 2.08 Mg/m³

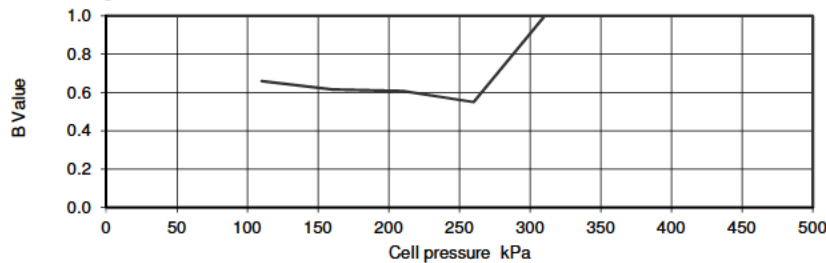
26.7 27.4 %

1.54 1.64 Mg/m³

0.75 0.65

96 113 %

Saturation Stage



Method:

Increments of cell and back pressure

Cell pressure increments 50 kPa

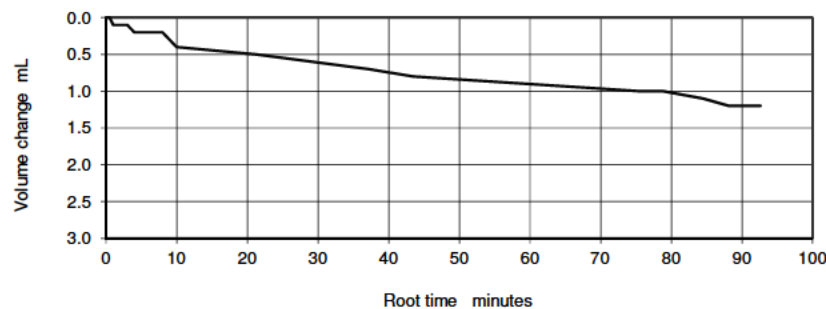
Differential Pressure 10 kPa

Final Cell Pressure 310 kPa

Final pore water pressure 292 kPa

Final B Value 1.04

Consolidation Stage



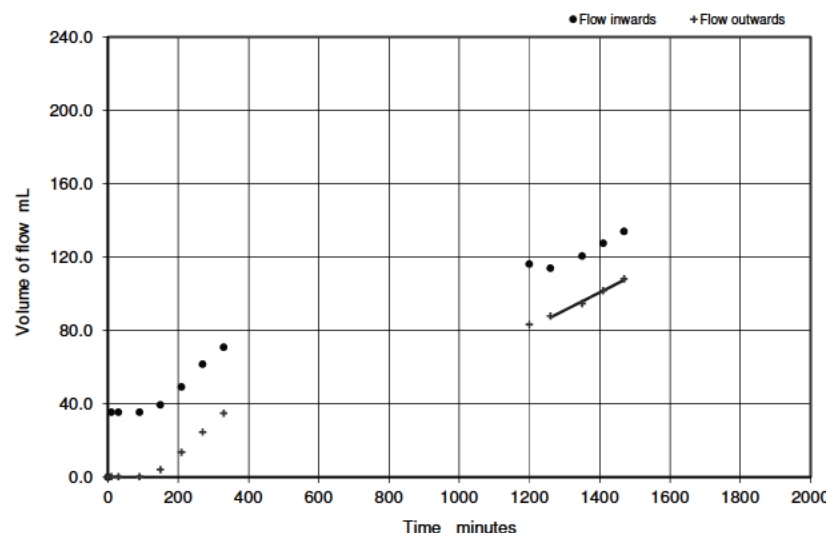
Drainage Condition to one end only

Cell pressure applied 325 kPa

Back pressure applied 300 kPa

Effective stress 25 kPa

Permeability Stage



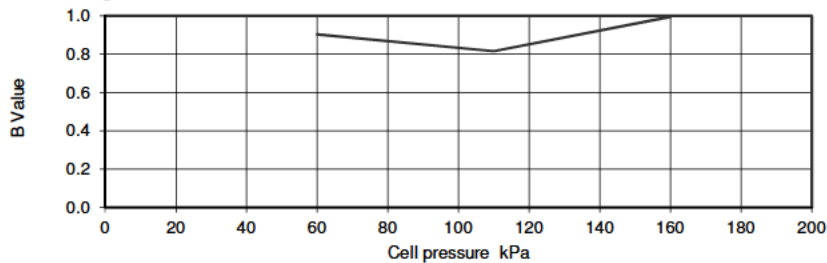
**Determination of Permeability in a Triaxial Cell
(BS1377 : Part 6 : 1990, clause 6 - Constant Head test)**

Project No	A9031-19	Sample Details:	Hole No.	ATK-TP-07		
Project Name	HAVANT THICKET WATER STORAGE		Depth (m BGL)	1.60-1.70		
			Sample No	9	Type	B
			ID			
			Spec Ref			

Specimen Details

Soil Description	Brown SAND.				
Specimen Type /Preparation	RECOMPACTED using 4.5kg effort at as received moisture content.		Bulk Density	1.98	2.09 Mg/m³
Length	92.7 mm		Water Content	29.3	28.9 %
Diameter	100.7 mm		Dry density	1.53	1.62 Mg/m³
Particle density	2.75 Mg/m³	Assumed	Voids ratio	0.80	0.69
			Degree of saturation	101	114 %

Saturation Stage

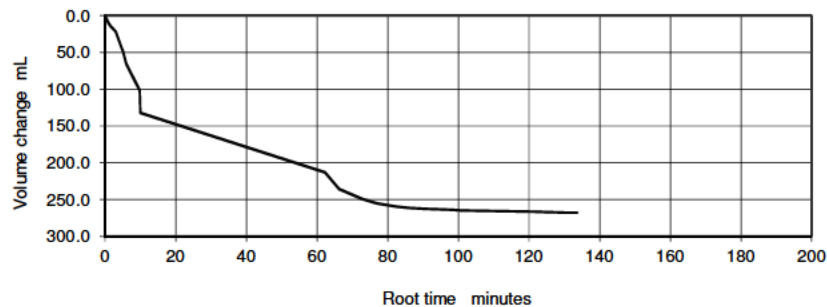


Method:

Increments of cell and back pressure

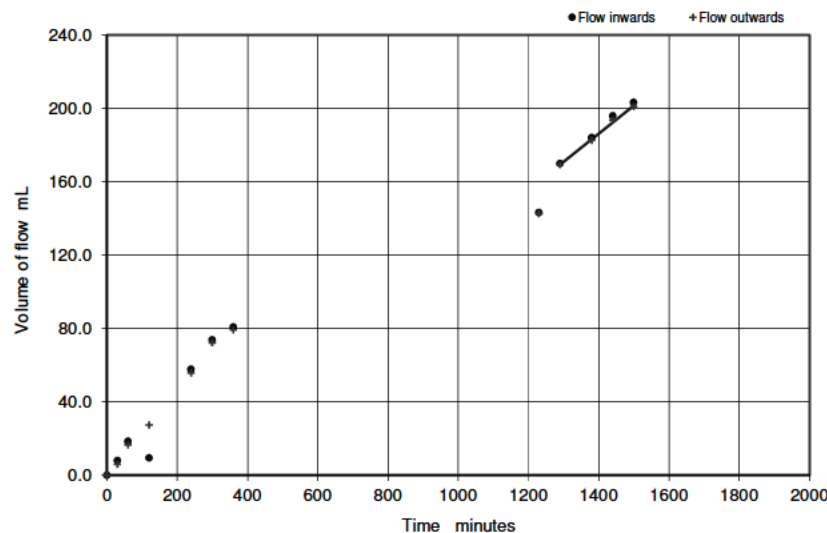
Cell pressure increments	50	kPa
Differential Pressure	10	kPa
Final Cell Pressure	160	kPa
Final pore water pressure	154	kPa
Final B Value	1.00	

Consolidation Stage



Drainage Condition	to one end only	
Cell pressure applied	330	kPa
Back pressure applied	300	kPa
Effective stress	30	kPa

Permeability Stage



Cell Pressure	335	kPa
Top Pressure	300	kPa
Base Pressure	310	kPa
Mean Effective Stress	30	kPa
Differential Pressure	10	kPa
Hydraulic gradient	11	

Mean rate of flow	0.15340	ml/min
Temperature during test	20.4	°C

PERMEABILITY, k_v

-8
(at 20°C) **2.9×10^{-8}** m/s

Notes

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**Determination of Permeability in a Triaxial Cell
(BS1377 : Part 6 : 1990, clause 6 - Constant Head test)**

Project No	A9031-19	Sample Details:	Hole No.	ATK-TP-08		
Project Name	HAVANT THICKET WATER STORAGE		Depth (m BGL)	1.50		
			Sample No	11	Type	B
			ID			
			Spec Ref			

Specimen Details

Soil Description Brown slightly clayey SAND.

Specimen Type RECOMPACTED using 4.5kg effort at as received
/Preparation moisture content.

Length 99.1 mm

Diameter 100.1 mm

Particle density 2.65 Mg/m³ Assumed

Bulk Density 1.97 1.99 Mg/m³

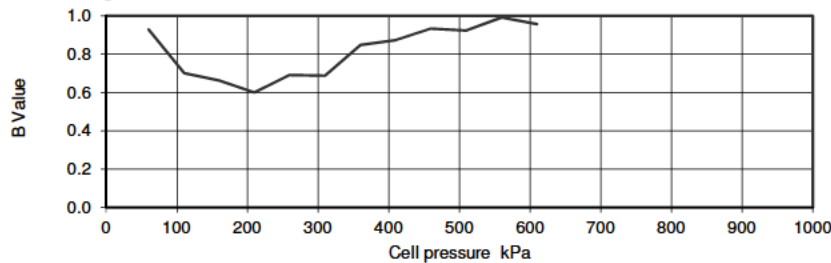
Water Content 28.7 29.4 %

Dry density 1.53 1.54 Mg/m³

Voids ratio 0.73 0.72

Degree of saturation 104 108 %

Saturation Stage



Method:

Increments of cell and back pressure

Cell pressure increments 50 kPa

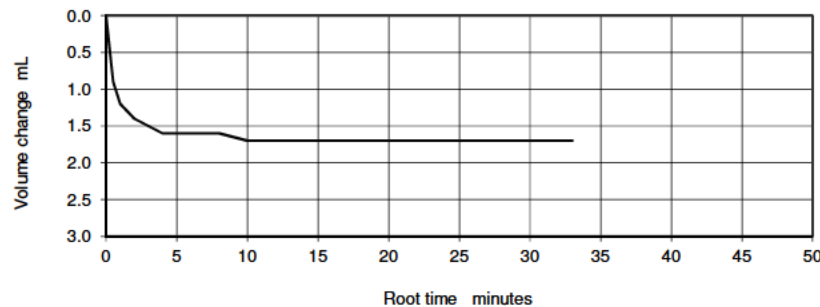
Differential Pressure 10 kPa

Final Cell Pressure 610 kPa

Final pore water pressure 540 kPa

Final B Value 0.96

Consolidation Stage



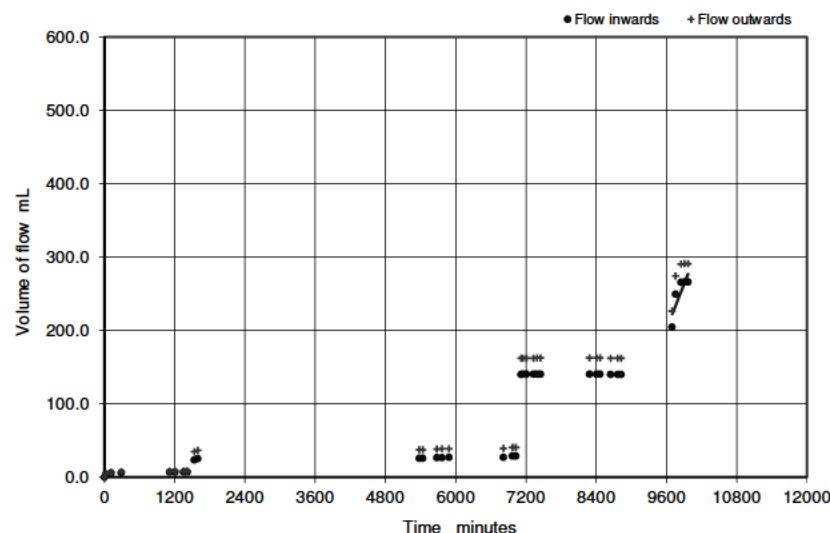
Drainage Condition to one end only

Cell pressure applied 580 kPa

Back pressure applied 550 kPa

Effective stress 30 kPa

Permeability Stage



Cell Pressure 585 kPa

Top Pressure 550 kPa

Base Pressure 580 kPa

Mean Effective Stress 20 kPa

Differential Pressure 30 kPa

Hydraulic gradient 31

Mean rate of flow 0.20427 ml/min

Temperature during test 20.2 °C

PERMEABILITY, k_v

-8
(at 20°C) **1.4×10^{-8}** m/s

Notes Differential pressure increased from 10kPa to 30kPa after 8710 minutes due to insufficient flow.

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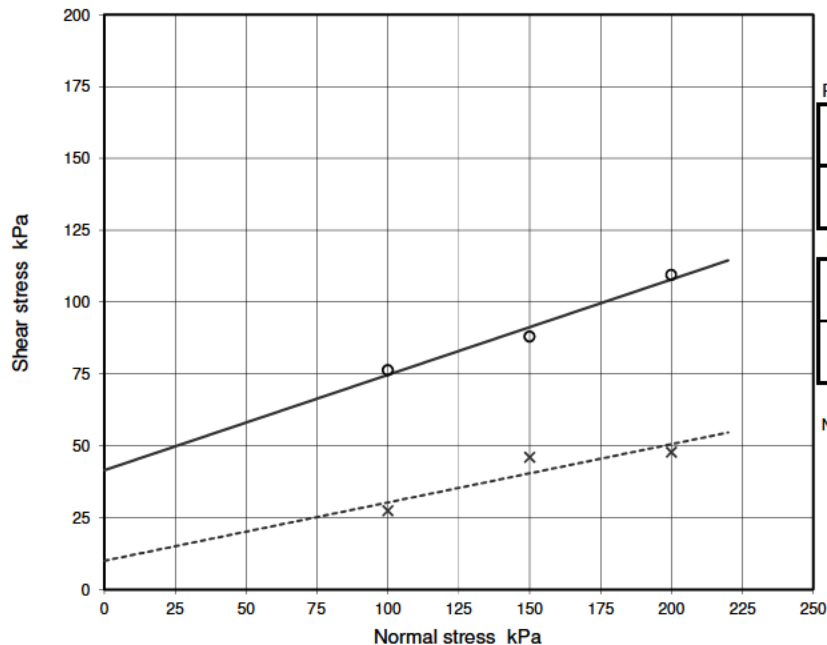
**Determination of shear strength by direct shear (Small shearbox apparatus)
(BS1377 : Part 7 : clause 4 : 1990)**

Project No	A9031-19	Sample Details:	Hole No.	ATK-CP-03
Project Name	Havant Thicket Water Storage		Depth (m BGL)	5.00-5.45
			Sample No	22
			Type	UT
			ID	
			Spec Ref	

Soil Description	Firm greyish brown slightly sandy CLAY.	Specimen(s) nominally 60mm x 60mm square
Specimen Type /Preparation	Undisturbed.	Test(s) carried out in submerged condition
		Particle density, assumed 2.65 Mg/m ³

Specimen Details		No.	1	2	3	4	5	6
Initial	Height	mm	25.1	25.1	25.1			
	Bulk Density	Mg/m ³	1.92	1.94	1.93			
	Water Content	%	27.2	25.4	26.5			
	Dry density	Mg/m ³	1.51	1.55	1.52			
	Voids ratio		0.753	0.709	0.740			
Consol ¹	Degree of Saturation	%	96	95	95			
	Consolidation / Normal Stress applied	kPa	100	150	200			
	Change in height during consolidation	mm	-0.510	-0.458	-0.620			
Shear see note 1	Voids ratio after consolidation		0.718	0.678	0.697			
	Voids ratio at end of test		0.700	0.560	0.694			
	Moisture content at end of test	%	26.4	21.1	26.2			
	Saturation at end of test	%	100	100	100			

Rate of displacement	Peak	mm/min	0.041	0.041	0.041			
	Residual	mm/min	0.103	0.103	0.103			
Peak values, (o)	Relative displacement	mm	1.79	2.02	1.24			
	Shear stress	kPa	76.3	88.0	109.5			
Residual values, (x)	No. of reversals		2	2	2			
	Relative displacement	mm	30.00	29.04	30.00			
	Shear stress	kPa	27.5	46.0	47.8			



Shear Strength Parameters

Peak strength, (o)		Regression	Manual
c'	kPa	41	-
Ø'	degrees	18½	-
Residual strength, (x)			
c' _R	kPa	10	-
Ø' _R	degrees	11½	-

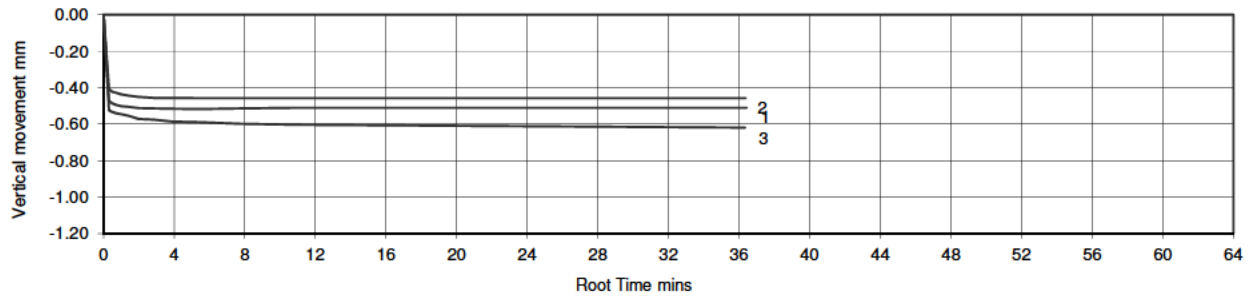
Notes :

1. After shear values based on BS1377. Pt 7 cl. 4.6.1.6 using ØH calculated from consolidation and shear stages.

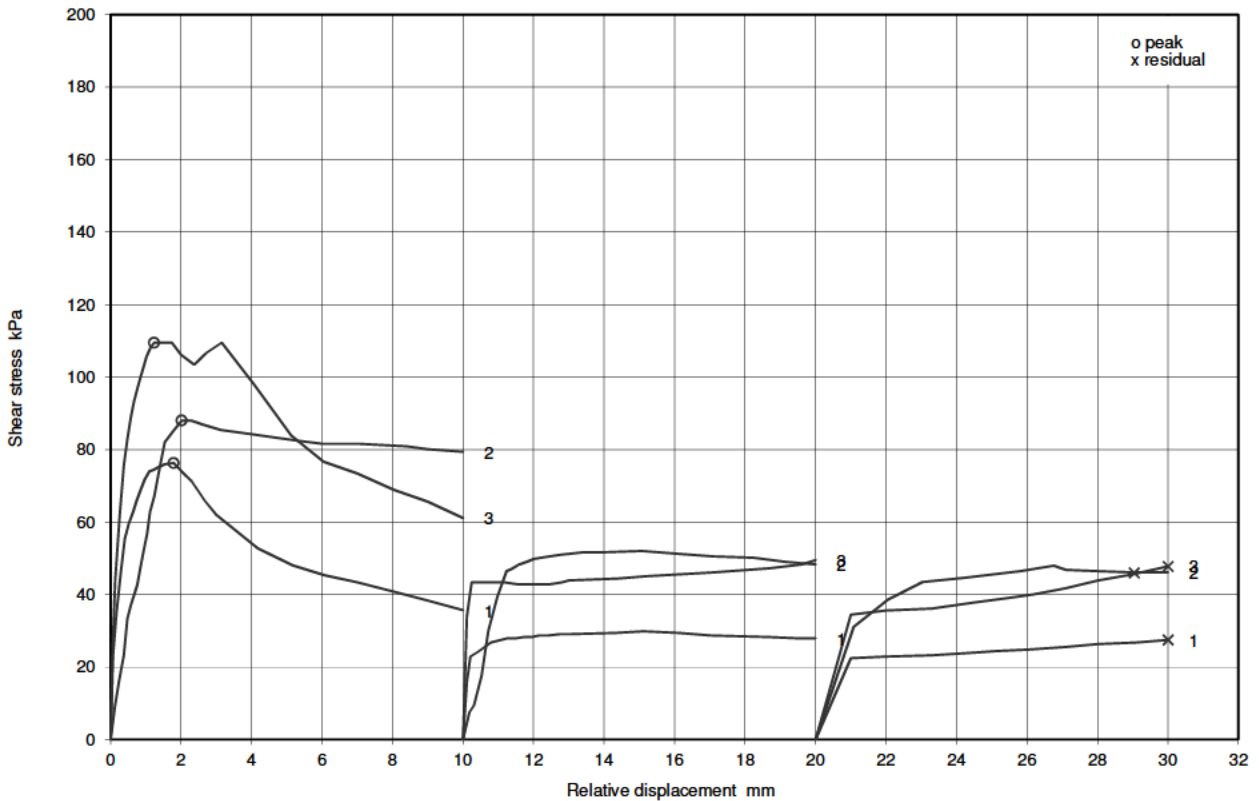
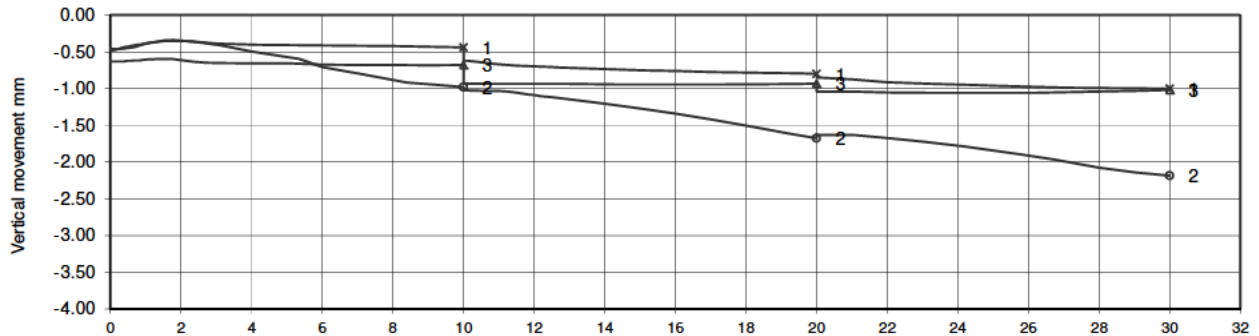
**Determination of shear strength by direct shear (Small shearbox apparatus)
(BS1377 : Part 7 : clause 4 : 1990)**

Project No	A9031-19	Sample Details:	Hole No.		ATK-CP-03	
Project Name	Havant Thicket Water Storage		Depth (m BGL)		5.00-5.45	
			Sample No	22	Type	UT
			ID			
			Spec Ref			

Consolidation stage(s)



Shearing stage(s)



Ref

SLR7.4
Rev 86.0
Feb18



Printed:28/02/2020 10:04

Figure

SSB

sheet 2 of 2

**Determination of shear strength by direct shear (Small shearbox apparatus)
(BS1377 : Part 7 : clause 4 : 1990)**

Project No	A9031-19	Sample Details:	Hole No.	ATK-CP-04
Project Name	Havant Thicket Water Storage		Depth (m BGL)	2.00
			Sample No	11
			Type	UT
			ID	
			Spec Ref	

Soil Description	Firm brown CLAY.
Specimen Type /Preparation	Undisturbed.

Specimen(s) nominally 60mm x 60mm square

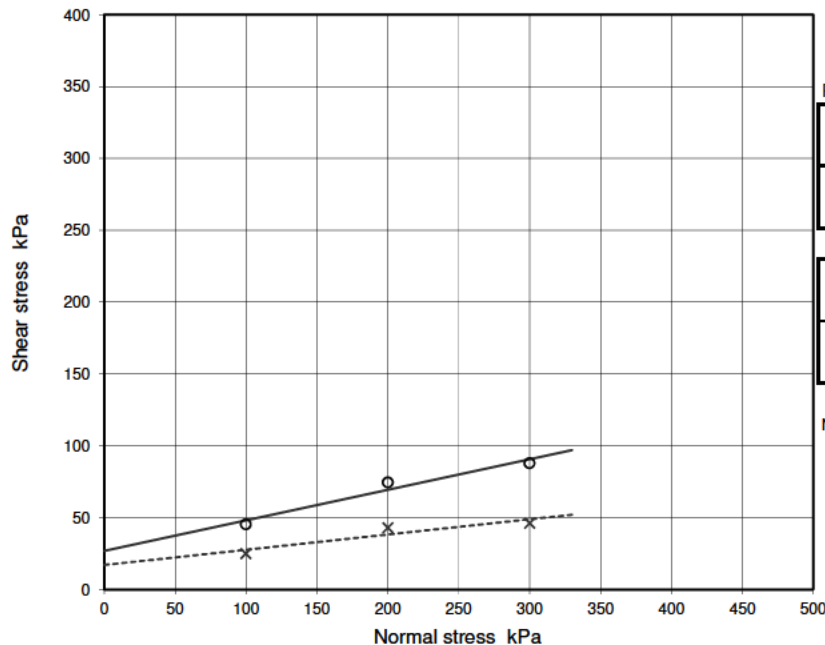
Test(s) carried out in submerged condition

Particle density, assumed 2.65 Mg/m³

Specimen Details		No.	1	2	3	4	5	6
Initial	Height	mm	25.0	25.0	25.0			
	Bulk Density	Mg/m ³	1.88	1.89	1.86			
	Water Content	%	30.1	29.3	29.4			
	Dry density	Mg/m ³	1.45	1.46	1.44			
	Voids ratio		0.833	0.816	0.844			
Consol ¹	Degree of Saturation	%	96	95	92			
	Consolidation / Normal Stress applied	kPa	100	200	300			
	Change in height during consolidation	mm	-0.676	-1.398	-2.330			
Shear see note 1	Voids ratio after consolidation		0.784	0.715	0.672			
	Voids ratio at end of test		0.745	0.618	0.623			
	Moisture content at end of test	%	28.1	23.3	23.5			
	Saturation at end of test	%	100	100	100			

Shearing stage

Rate of displacement	Peak	mm/min	0.028	0.028	0.028			
	Residual	mm/min	0.070	0.070	0.070			
Peak values, (o)	Relative displacement	mm	1.87	2.80	2.15			
	Shear stress	kPa	45.4	74.6	87.9			
Residual values, (x)	No. of reversals		2	2	2			
	Relative displacement	mm	30.00	30.00	30.00			
	Shear stress	kPa	25.1	43.2	46.2			



Shear Strength Parameters

Peak strength, (o)		Regression	Manual
c'	kPa	27	-
Ø'	degrees	12	-

Residual strength, (x)		Regression	Manual
c' _R	kPa	17	-
Ø' _R	degrees	6	-

Notes :

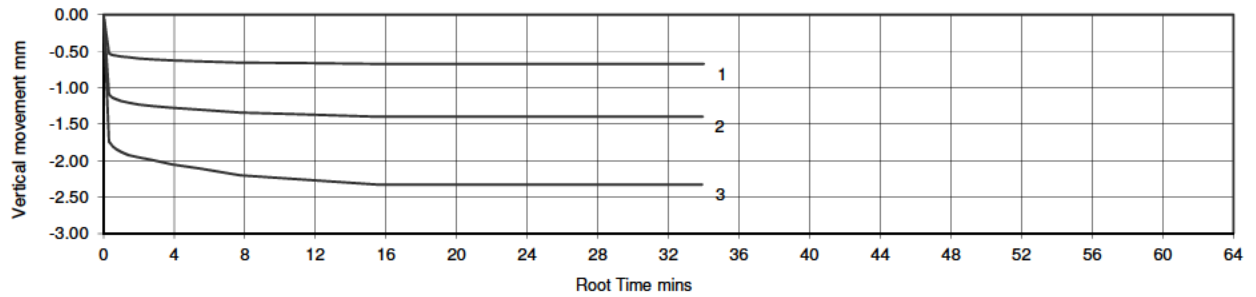
1 After shear values based on BS1377. Pt 7 cl. 4.6.1.6
using ØH calculated from consolidation and shear stages

Ref SLR7.4 Rev 86.0 Feb18	  0001	Printed:28/02/2020 10:10	Figure SSB sheet 1 of 2
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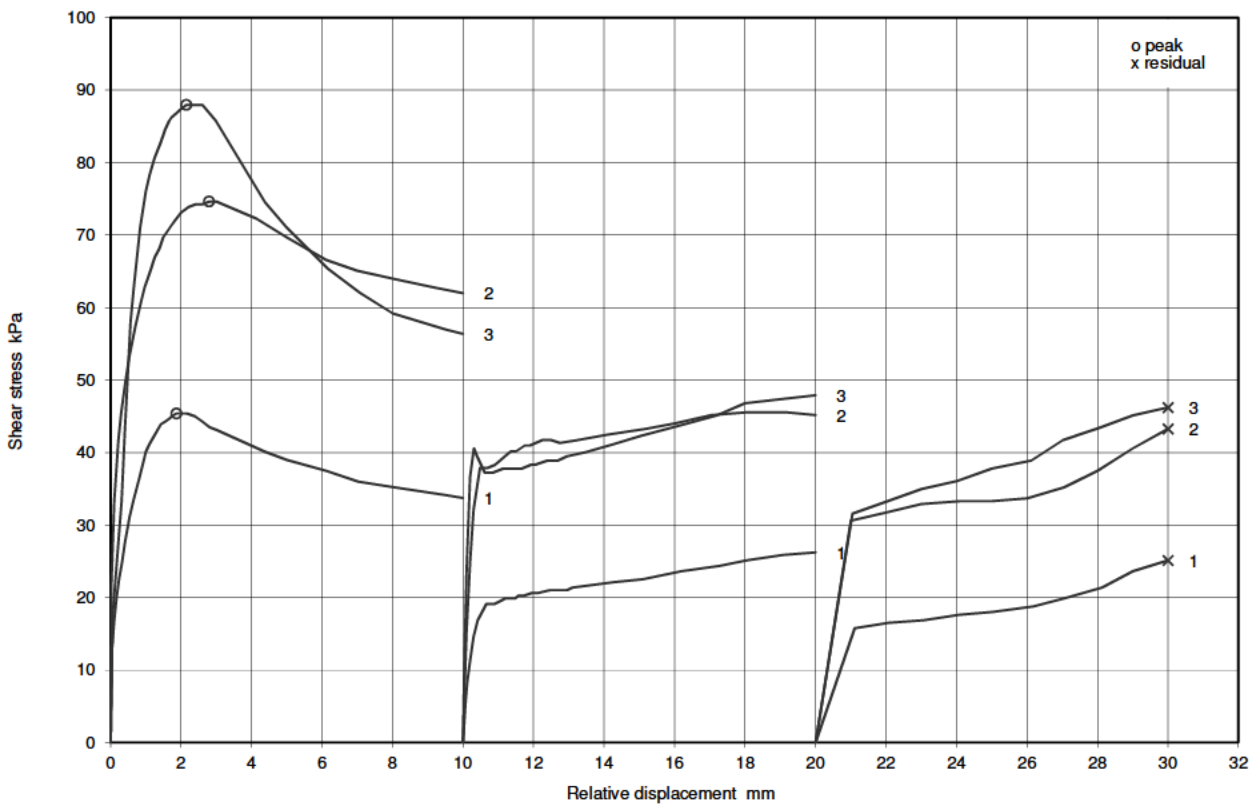
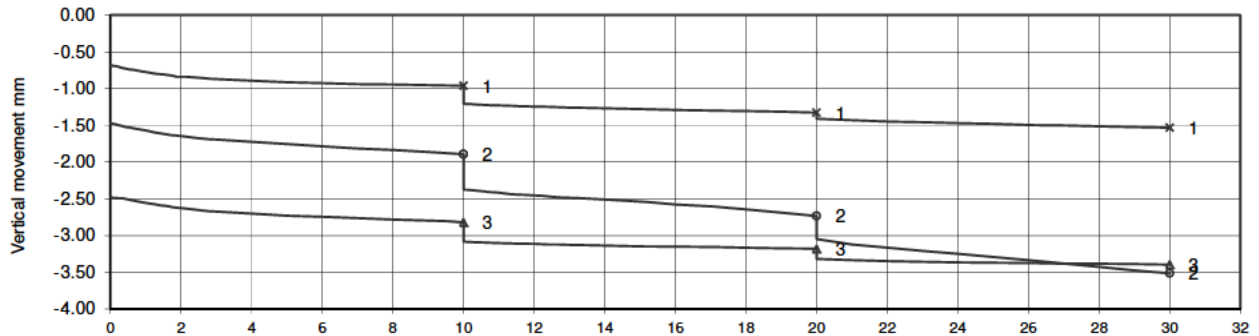
**Determination of shear strength by direct shear (Small shearbox apparatus)
(BS1377 : Part 7 : clause 4 : 1990)**

Project No	A9031-19	Sample Details:	Hole No.		ATK-CP-04		
Project Name	Havant Thicket Water Storage		Depth (m BGL)		2.00		
			Sample No	11	Type	UT	
			ID				
			Spec Ref				

Consolidation stage(s)



Shearing stage(s)



Ref	 SOCOTEC	 UKAS TESTING 0001	Printed:28/02/2020 10:10	Figure
SLR7.4 Rev 86.0 Feb18				SSB sheet 2 of 2

**Determination of shear strength by direct shear (Small shearbox apparatus)
(BS1377 : Part 7 : clause 4 : 1990)**

Project No	A9031-19	Sample Details:	Hole No.		ATK-CP-04	
Project Name	Havant Thicket Water Storage		Depth (m BGL)		10.00	
			Sample No	42	Type	UT
			ID			
			Spec Ref			

Soil Description	Firm grey CLAY.
Specimen Type /Preparation	Undisturbed.

Specimen(s) nominally 60mm x 60mm square

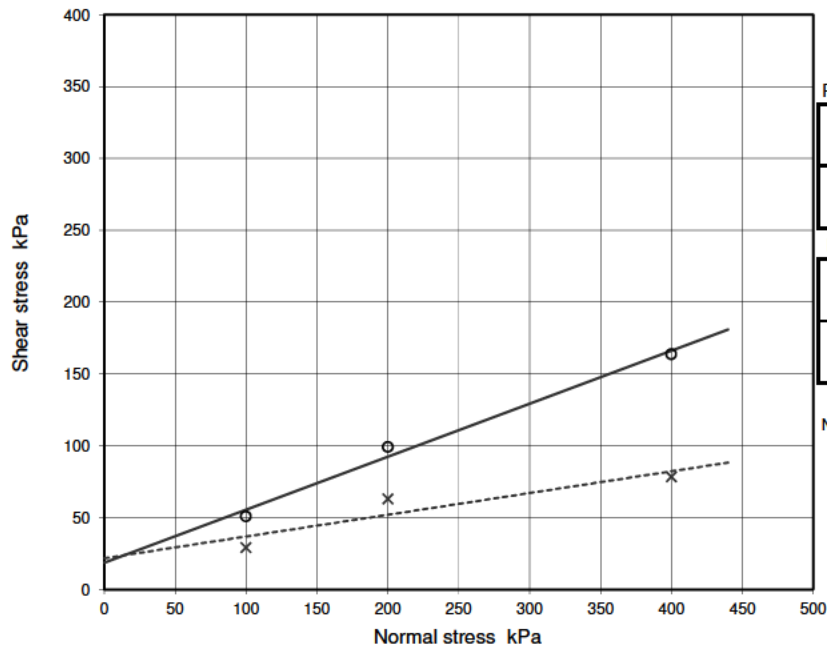
Test(s) carried out in submerged condition

Particle density, assumed 2.65 Mg/m³

Specimen Details		No.	1	2	3	4	5	6
Initial	Height	mm	25.0	25.0	25.0			
	Bulk Density	Mg/m ³	1.98	2.00	1.98			
	Water Content	%	25.9	23.9	24.3			
	Dry density	Mg/m ³	1.58	1.61	1.59			
	Voids ratio		0.682	0.641	0.667			
Consol ¹	Degree of Saturation	%	101	99	97			
	Consolidation / Normal Stress applied	kPa	100	200	400			
	Change in height during consolidation	mm	-0.504	-0.878	-1.404			
Shear see note 1	Voids ratio after consolidation		0.648	0.583	0.573			
	Voids ratio at end of test		0.560	0.537	0.507			
	Moisture content at end of test	%	21.1	20.3	19.1			
	Saturation at end of test	%	100	100	100			

Shearing stage

Rate of displacement	Peak	mm/min	0.030	0.030	0.030			
	Residual	mm/min	0.075	0.075	0.075			
Peak values, (o)	Relative displacement	mm	2.13	2.12	1.96			
	Shear stress	kPa	50.8	99.3	163.8			
Residual values, (x)	No. of reversals		2	2	2			
	Relative displacement	mm	30.00	30.00	30.00			
	Shear stress	kPa	29.3	63.2	78.5			



Shear Strength Parameters

Peak strength, (o)		Regression	Manual
c'	kPa	19	-
Ø'	degrees	20	-

Residual strength, (x)		Regression	Manual
c' _R	kPa	22	-
Ø' _R	degrees	8½	-

Notes :

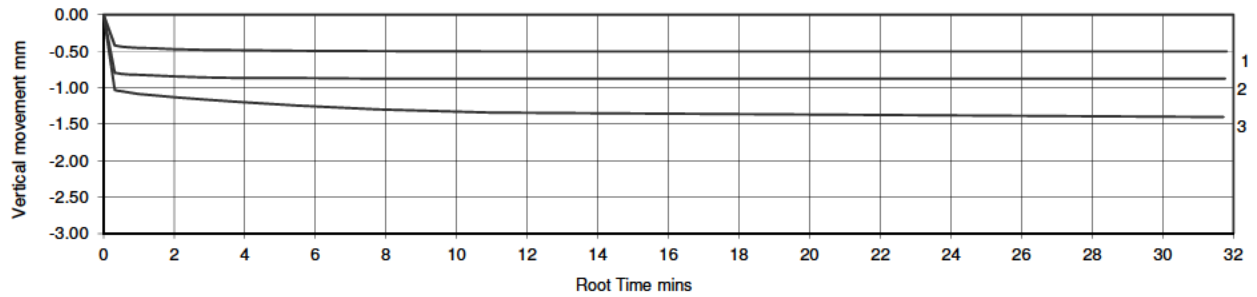
1 After shear values based on BS1377. Pt 7 cl. 4.6.1.6
using ØH calculated from consolidation and shear stages

Ref SLR7.4 Rev 86.0 Feb18	  0001	Printed:10/02/2020 18:14	Figure SSB sheet 1 of 2
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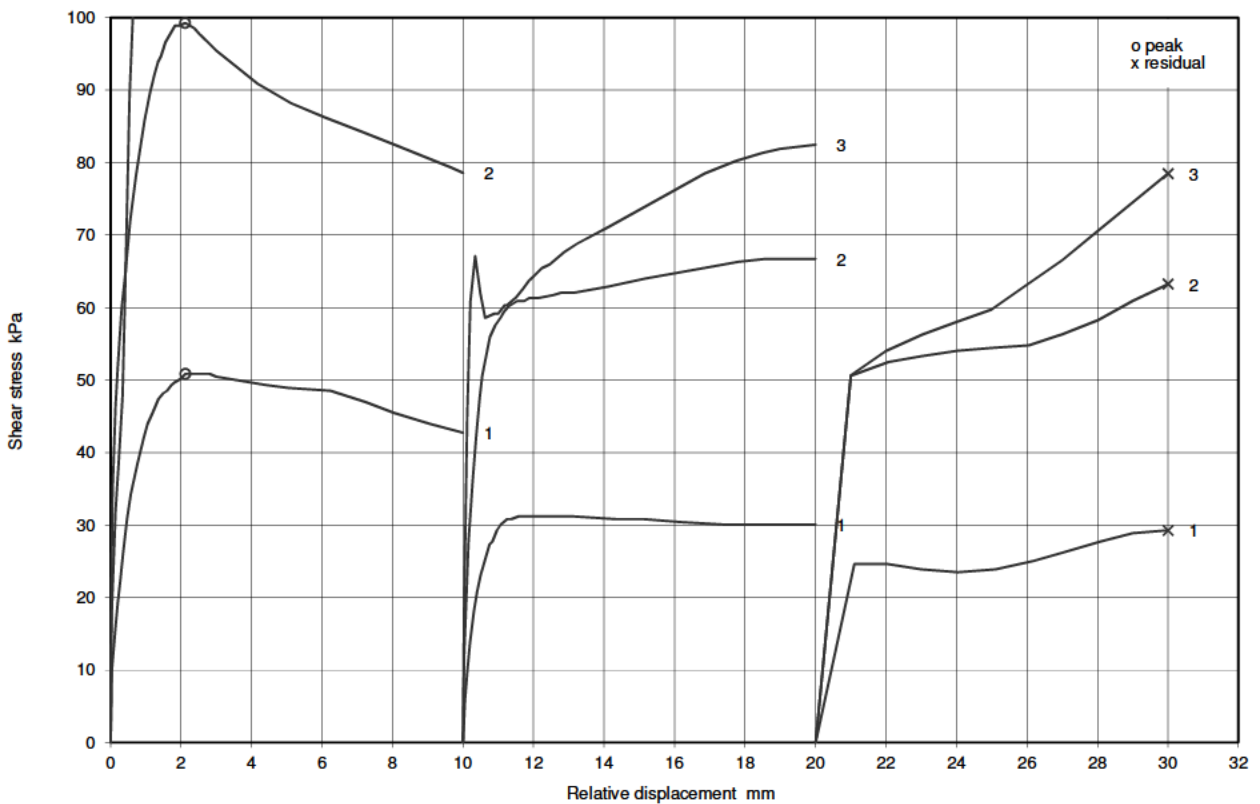
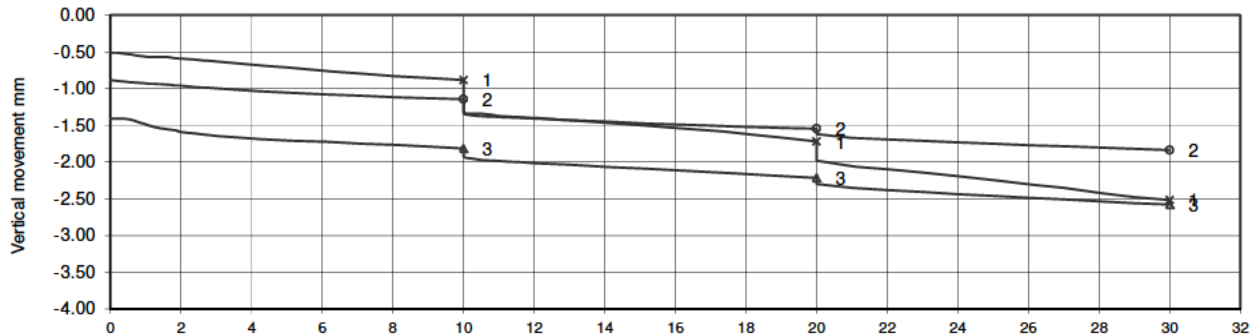
**Determination of shear strength by direct shear (Small shearbox apparatus)
(BS1377 : Part 7 : clause 4 : 1990)**

Project No	A9031-19	Sample Details:	Hole No.		ATK-CP-04	
Project Name	Havant Thicket Water Storage		Depth (m BGL)		10.00	
			Sample No	42	Type	UT
			ID			
			Spec Ref			

Consolidation stage(s)



Shearing stage(s)



Ref	SLR7.4 Rev 86.0 Feb18			Printed:10/02/2020 18:14	Figure SSB sheet 2 of 2
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**Determination of shear strength by direct shear (Small shearbox apparatus)
(BS1377 : Part 7 : clause 4 : 1990)**

Project No	A9031-19	Sample Details:	Hole No.	ATK-CP-05
Project Name	Havant Thicket Water Storage		Depth (m BGL)	2.00
			Sample No	11
			Type	UT
			ID	
			Spec Ref	

Soil Description	Firm brown CLAY.
Specimen Type /Preparation	Undisturbed.

Specimen(s) nominally 60mm x 60mm square

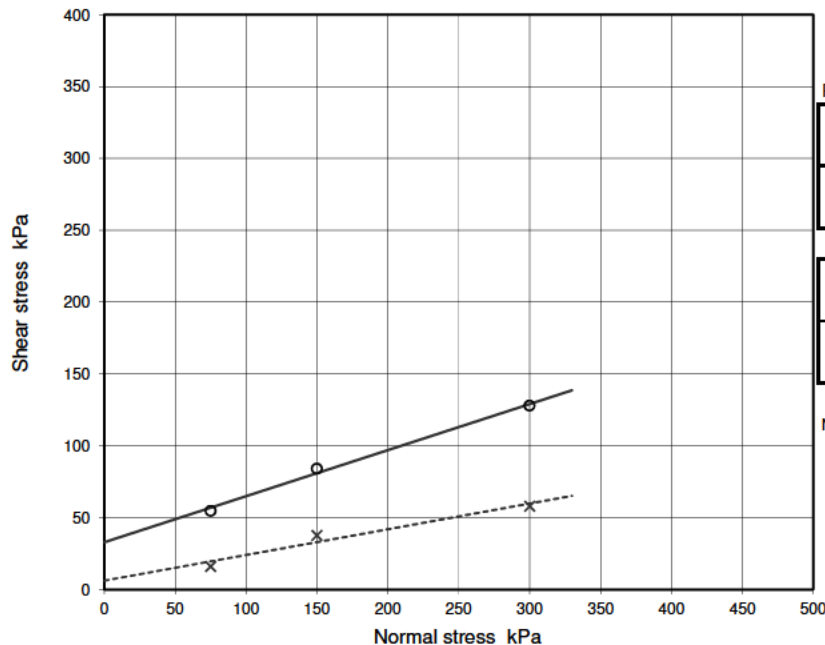
Test(s) carried out in submerged condition

Particle density, assumed 2.65 Mg/m³

Specimen Details		No.	1	2	3	4	5	6
Initial	Height	mm	25.0	25.0	25.0			
	Bulk Density	Mg/m ³	1.86	1.87	1.85			
	Water Content	%	31.9	33.3	32.4			
	Dry density	Mg/m ³	1.41	1.40	1.40			
	Voids ratio		0.882	0.890	0.899			
Consol ¹	Degree of Saturation	%	96	99	95			
	Consolidation / Normal Stress applied	kPa	75	150	300			
	Change in height during consolidation	mm	-0.360	-0.572	-1.466			
Shear see note 1	Voids ratio after consolidation		0.855	0.847	0.787			
	Voids ratio at end of test		0.866	0.828	0.713			
	Moisture content at end of test	%	32.7	31.2	26.9			
	Saturation at end of test	%	100	100	100			

Shearing stage

Rate of displacement	Peak	mm/min	0.038	0.038	0.038			
	Residual	mm/min	0.094	0.094	0.094			
Peak values, (o)	Relative displacement	mm	1.26	1.31	2.07			
	Shear stress	kPa	54.7	84.2	128.0			
Residual values, (x)	No. of reversals		2	2	2			
	Relative displacement	mm	16.00	30.00	30.00			
	Shear stress	kPa	16.1	37.9	58.1			



Shear Strength Parameters

Peak strength, (o)		Regression	Manual
c'	kPa	33	-
Ø'	degrees	18	-

Residual strength, (x)		Regression	Manual
c' _R	kPa	6.0	-
Ø' _R	degrees	10	-

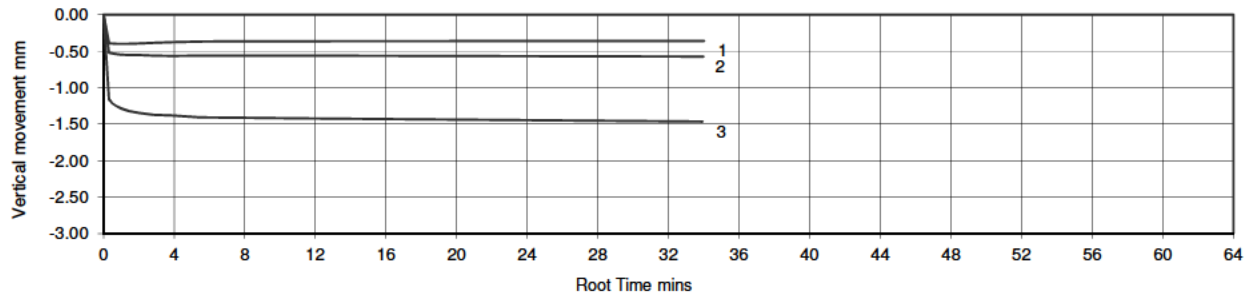
Notes :

1 After shear values based on BS1377. Pt 7 cl. 4.6.1.6
using ØH calculated from consolidation and shear stages

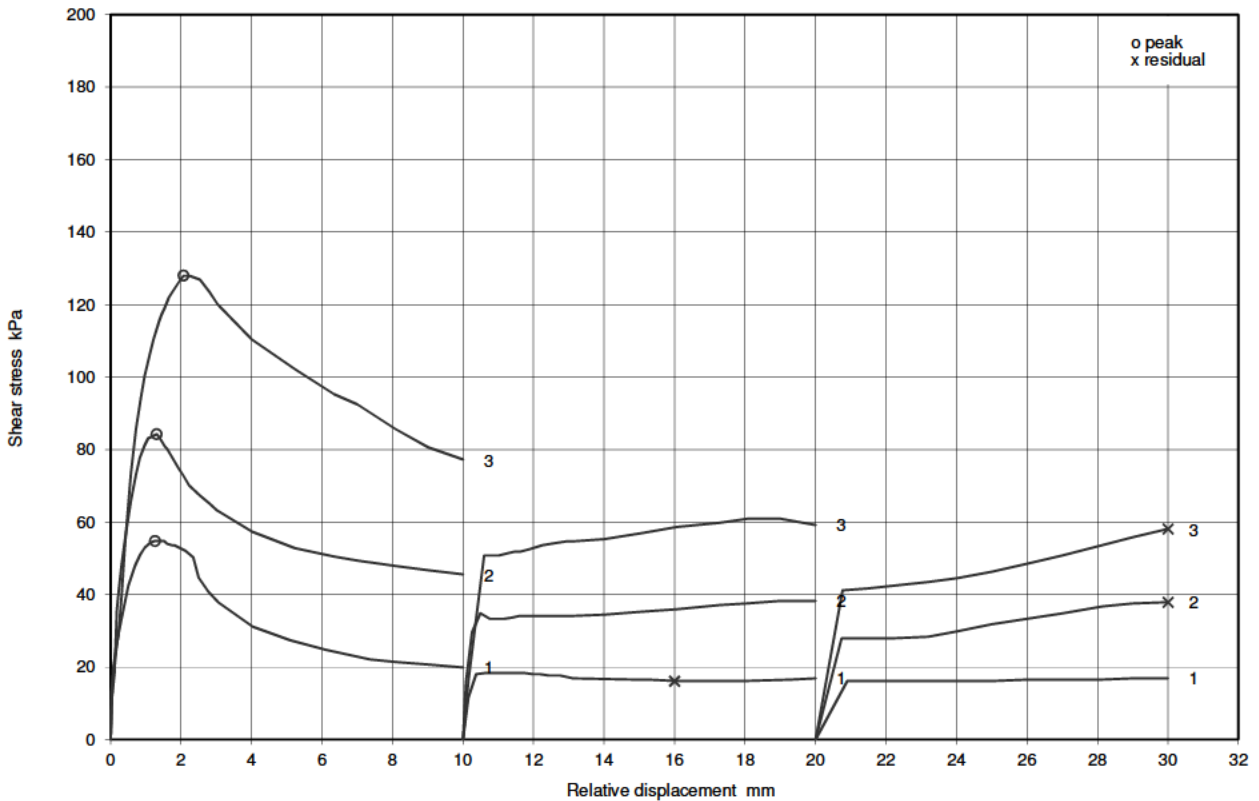
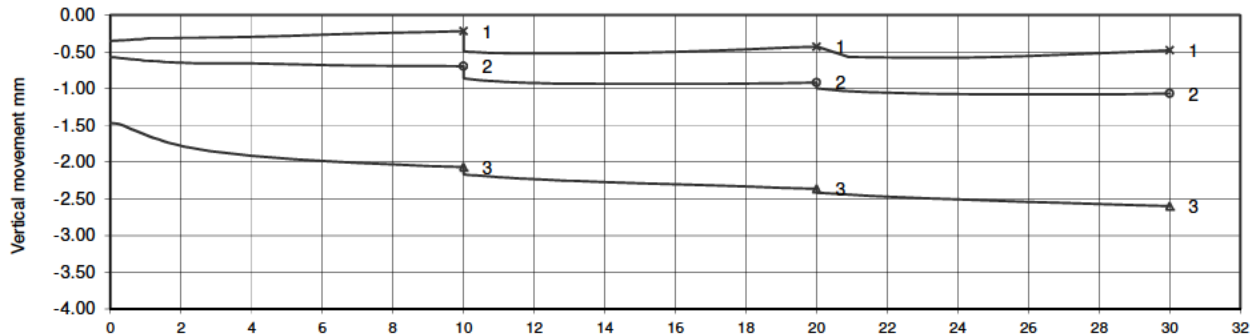
**Determination of shear strength by direct shear (Small shearbox apparatus)
(BS1377 : Part 7 : clause 4 : 1990)**

Project No	A9031-19	Sample Details:	Hole No.		ATK-CP-05	
Project Name	Havant Thicket Water Storage		Depth (m BGL)		2.00	
			Sample No	11	Type	UT
			ID			
			Spec Ref			

Consolidation stage(s)



Shearing stage(s)



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Figure

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**Determination of shear strength by direct shear (Small shearbox apparatus)
(BS1377 : Part 7 : clause 4 : 1990)**

Project No	A9031-19	Sample Details:	Hole No.	ATK-CP-05
Project Name	Havant Thicket Water Storage		Depth (m BGL)	6.00
			Sample No	26
			Type	UT
			ID	
			Spec Ref	

Soil Description	Firm grey CLAY.
Specimen Type /Preparation	Undisturbed.

Specimen(s) nominally 60mm x 60mm square

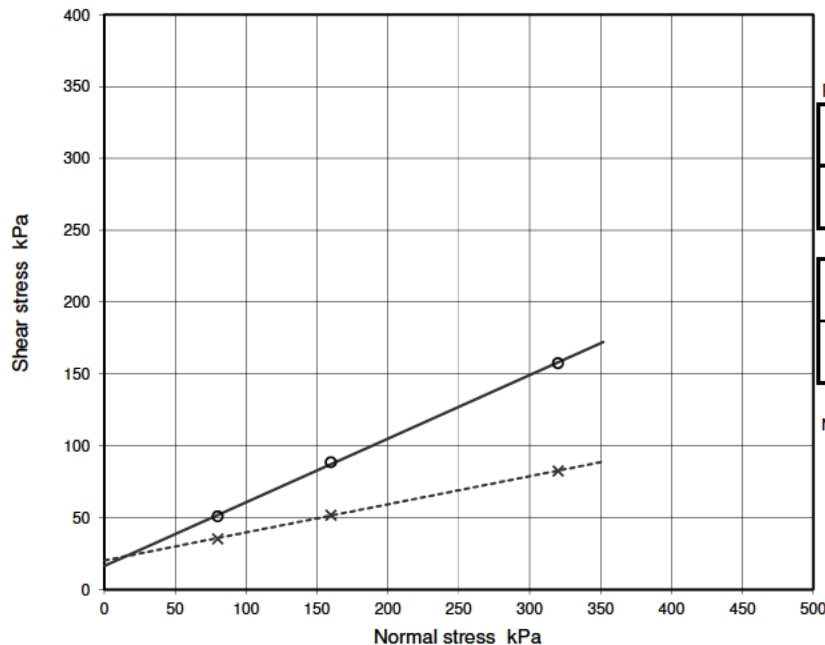
Test(s) carried out in submerged condition

Particle density, assumed 2.65 Mg/m³

Specimen Details		No.	1	2	3	4	5	6
Initial	Height	mm	25.0	25.0	25.0			
	Bulk Density	Mg/m ³	1.97	1.99	1.99			
	Water Content	%	24.5	25.0	23.8			
	Dry density	Mg/m ³	1.58	1.59	1.61			
	Voids ratio		0.678	0.668	0.649			
Consol ¹	Degree of Saturation	%	96	99	97			
	Consolidation / Normal Stress applied	kPa	80	160	320			
	Change in height during consolidation	mm	-0.120	-0.404	-1.210			
Shear see note 1	Voids ratio after consolidation		0.669	0.641	0.569			
	Voids ratio at end of test		0.643	0.618	0.423			
	Moisture content at end of test	%	24.3	22.1	16.0			
	Saturation at end of test	%	100	95	100			

Shearing stage

Rate of displacement	Peak	mm/min	0.038	0.038	0.038			
	Residual	mm/min	0.094	0.094				
Peak values, (o)	Relative displacement	mm	2.59	2.33	2.52			
	Shear stress	kPa	50.8	88.5	157.5			
Residual values, (x)	No. of reversals		2	2	2			
	Relative displacement	mm	10.00	30.00	30.00			
	Shear stress	kPa	35.4	51.7	82.5			



Shear Strength Parameters

Peak strength, (o)		Regression	Manual
c'	kPa	16	-
Ø'	degrees	24	-

Residual strength, (x)		Regression	Manual
c' _R	kPa	20	-
Ø' _R	degrees	11	-

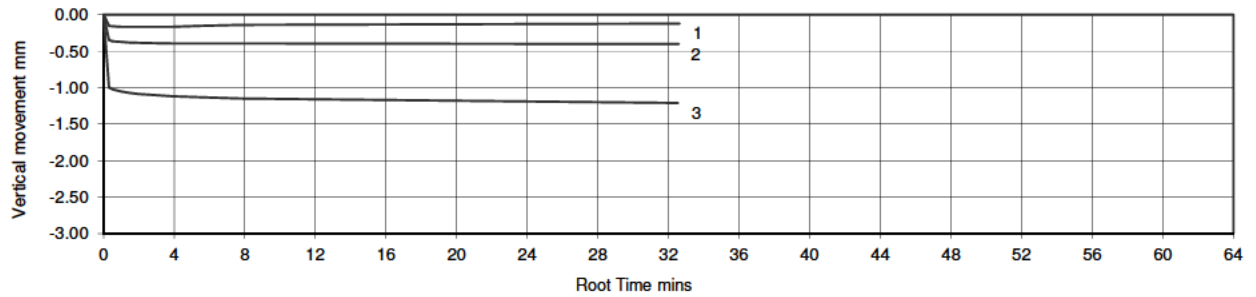
Notes :

1 After shear values based on BS1377. Pt 7 cl. 4.6.1.6
using ØH calculated from consolidation and shear stages

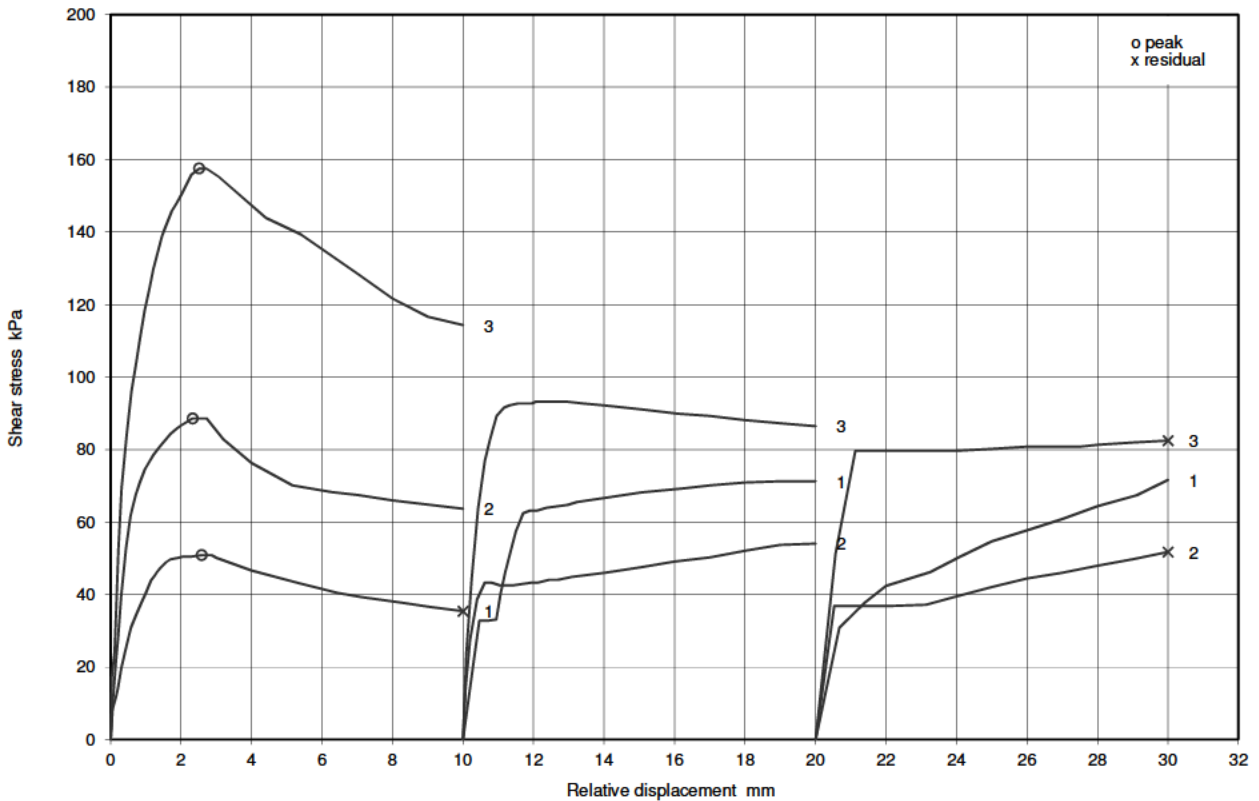
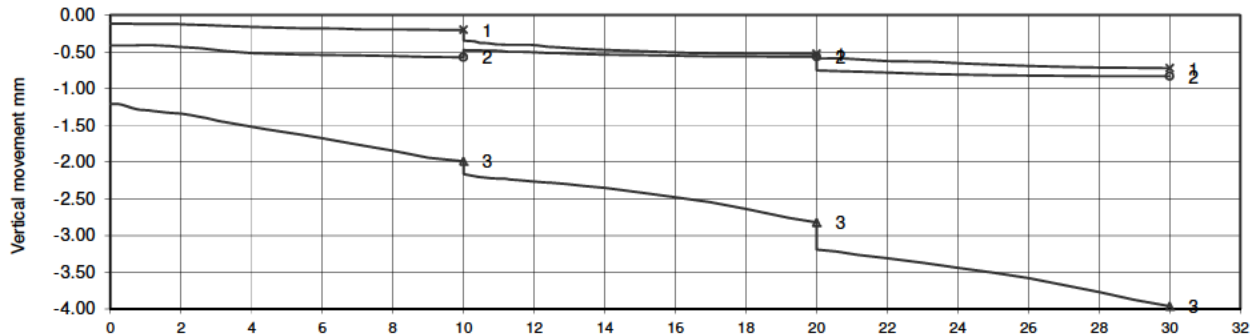
**Determination of shear strength by direct shear (Small shearbox apparatus)
(BS1377 : Part 7 : clause 4 : 1990)**

Project No	A9031-19	Sample Details:	Hole No.		ATK-CP-05	
Project Name	Havant Thicket Water Storage		Depth (m BGL)		6.00	
			Sample No	26	Type	UT
			ID			
			Spec Ref			

Consolidation stage(s)



Shearing stage(s)



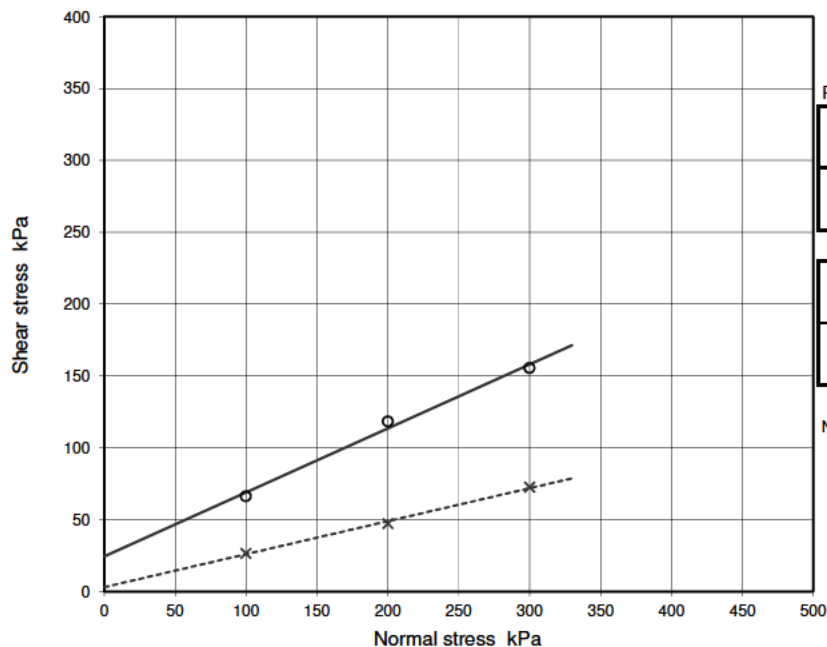
**Determination of shear strength by direct shear (Small shearbox apparatus)
(BS1377 : Part 7 : clause 4 : 1990)**

Project No	A9031-19	Sample Details:	Hole No.	ATK-CP-05
Project Name	Havant Thicket Water Storage		Depth (m BGL)	14.50
			Sample No	55
			Type	UT
			ID	
			Spec Ref	

Soil Description	Firm to stiff light brownish grey mottled reddish brown slightly sandy silty CLAY.	Specimen(s) nominally 60mm x 60mm square
Specimen Type /Preparation	Undisturbed.	Test(s) carried out in submerged condition
		Particle density, assumed 2.65 Mg/m ³

Specimen Details		No.	1	2	3	4	5	6
Initial	Height	mm	25.2	25.2	25.2			
	Bulk Density	Mg/m ³	2.09	2.12	2.11			
	Water Content	%	17.6	16.5	16.3			
	Dry density	Mg/m ³	1.78	1.82	1.81			
	Voids ratio		0.491	0.456	0.463			
Consol ¹	Degree of Saturation	%	95	96	94			
	Consolidation / Normal Stress applied	kPa	100	200	300			
	Change in height during consolidation	mm	-0.254	-0.468	-0.800			
Shear see note 1	Voids ratio after consolidation		0.476	0.429	0.417			
	Voids ratio at end of test		0.368	0.282	0.284			
	Moisture content at end of test	%	13.9	10.6	10.7			
	Saturation at end of test	%	100	100	100			

Shearing stage								
Rate of displacement	Peak	mm/min	0.038	0.038	0.038			
	Residual	mm/min	0.094	0.094	0.094			
Peak values, (o)	Relative displacement	mm	5.09	2.84	5.26			
	Shear stress	kPa	66.4	118.4	155.4			
Residual values, (x)	No. of reversals		2	2	2			
	Relative displacement	mm	30.00	28.00	30.00			
	Shear stress	kPa	26.7	47.4	72.6			



Shear Strength Parameters

Peak strength, (o)		Regression	Manual
c'	kPa	24	-
Ø'	degrees	24	-
Residual strength, (x)			
c' _R	kPa	3.0	-
Ø' _R	degrees	13	-

Notes :

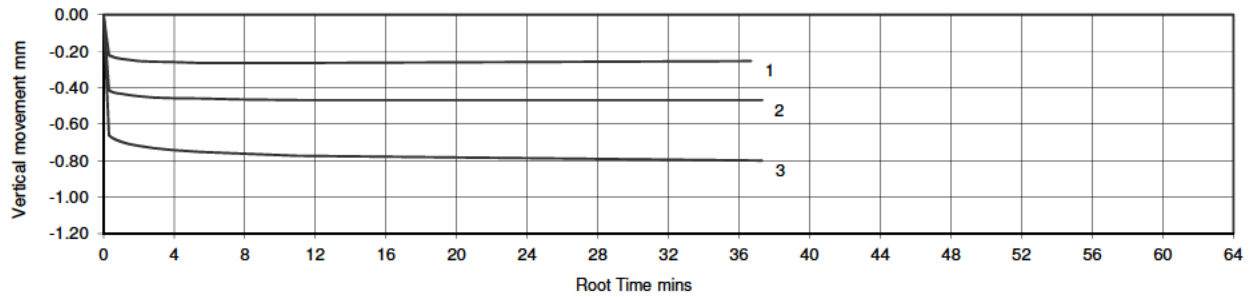
1. After shear values based on BS1377. Pt 7 cl. 4.6.1.6 using ØH calculated from consolidation and shear stages.

Ref SLR7.4 Rev 86.0 Feb18	  0001	Printed:28/02/2020 10:14	Figure SSB sheet 1 of 2
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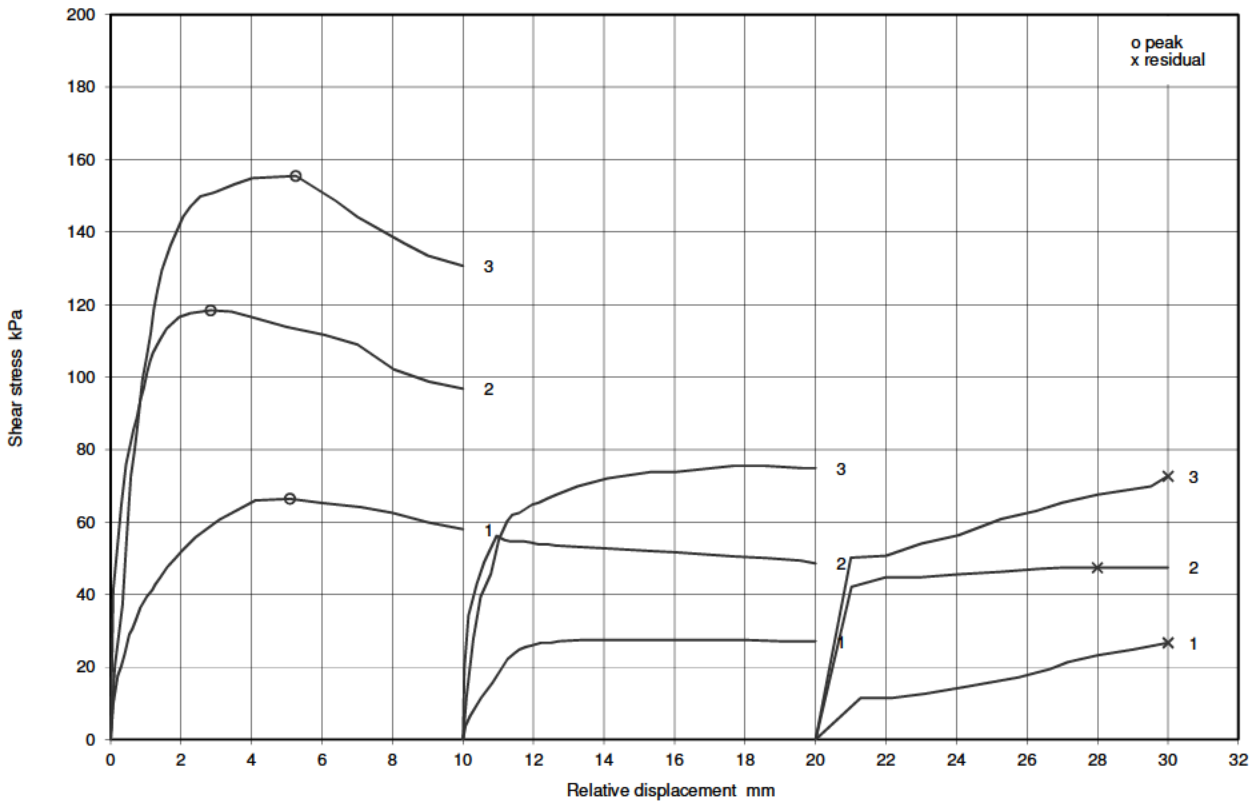
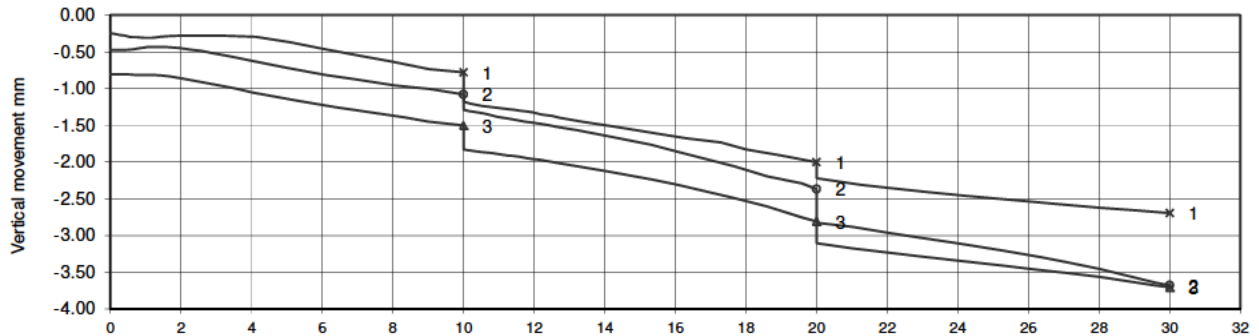
**Determination of shear strength by direct shear (Small shearbox apparatus)
(BS1377 : Part 7 : clause 4 : 1990)**

Project No	A9031-19	Sample Details:	Hole No.		ATK-CP-05	
Project Name	Havant Thicket Water Storage		Depth (m BGL)		14.50	
			Sample No	55	Type	UT
			ID			
			Spec Ref			

Consolidation stage(s)



Shearing stage(s)



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			sheet 2 of 2

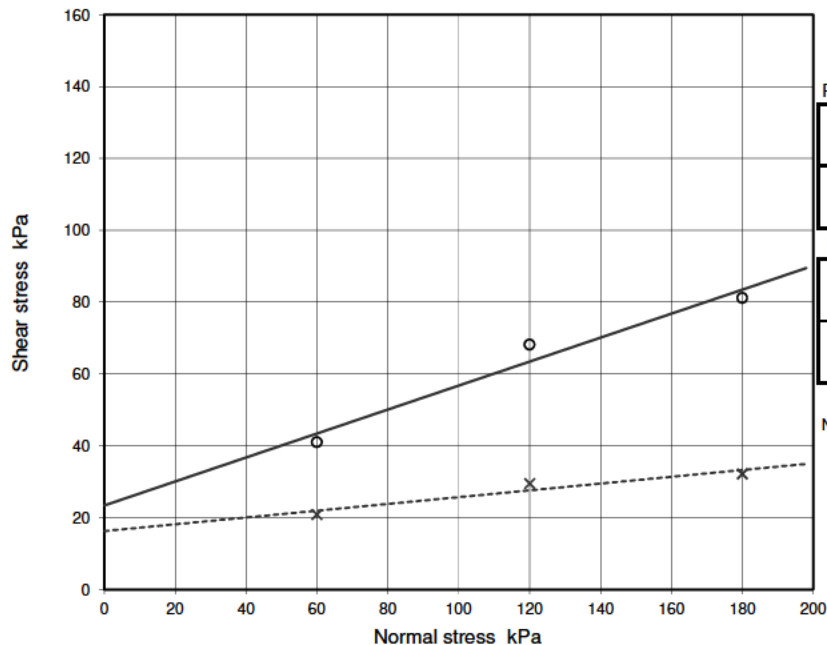
**Determination of shear strength by direct shear (Small shearbox apparatus)
(BS1377 : Part 7 : clause 4 : 1990)**

Project No	A9031-19	Sample Details:	Hole No.	ATK-CP-06
Project Name	Havant Thicket Water Storage		Depth (m BGL)	4.00-4.45
			Sample No	20
			Type	UT
			ID	
			Spec Ref	

Soil Description	Firm reddish brown CLAY.	Specimen(s) nominally 60mm x 60mm square
Specimen Type /Preparation	Undisturbed.	Test(s) carried out in submerged condition
		Particle density, assumed 2.65 Mg/m ³

Specimen Details		No.	1	2	3	4	5	6
Initial	Height	mm	25.2	25.2	25.2			
	Bulk Density	Mg/m ³	2.02	2.02	2.01			
	Water Content	%	21.7	21.6	21.5			
	Dry density	Mg/m ³	1.66	1.66	1.66			
	Voids ratio		0.596	0.592	0.601			
Consol ¹	Degree of Saturation	%	96	97	95			
	Consolidation / Normal Stress applied	kPa	60	120	180			
	Change in height during consolidation	mm	-0.228	-0.356	-0.562			
Shear see note 1	Voids ratio after consolidation		0.582	0.570	0.565			
	Voids ratio at end of test		0.521	0.543	0.509			
	Moisture content at end of test	%	19.7	20.5	19.2			
	Saturation at end of test	%	100	100	100			

Shearing stage								
Rate of displacement	Peak	mm/min	0.038	0.038	0.038			
	Residual	mm/min	0.094	0.094	0.094			
Peak values, (o)	Relative displacement	mm	2.20	2.04	1.72			
	Shear stress	kPa	41.1	68.2	81.1			
Residual values, (x)	No. of reversals		2	2	2			
	Relative displacement	mm	30.00	30.00	30.00			
	Shear stress	kPa	20.9	29.6	32.2			



Shear Strength Parameters

Peak strength, (o)		Regression	Manual
c'	kPa	23	-
Ø'	degrees	18½	-
Residual strength, (x)			
c' _R	kPa	16	-
Ø' _R	degrees	5½	-

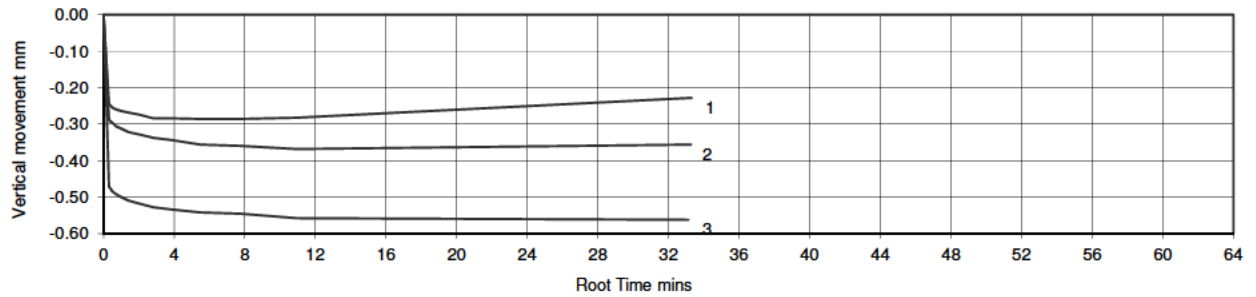
Notes :

1. After shear values based on BS1377. Pt 7 cl. 4.6.1.6 using ØH calculated from consolidation and shear stages.

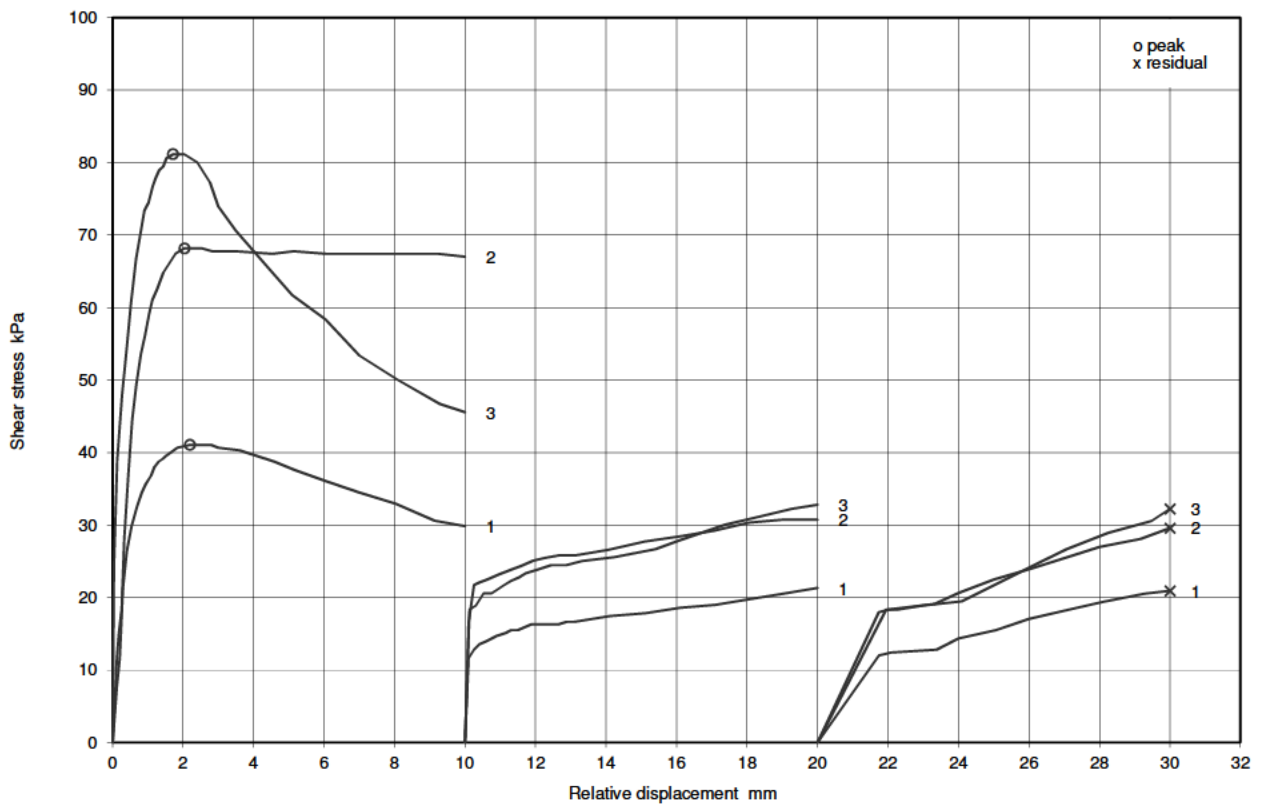
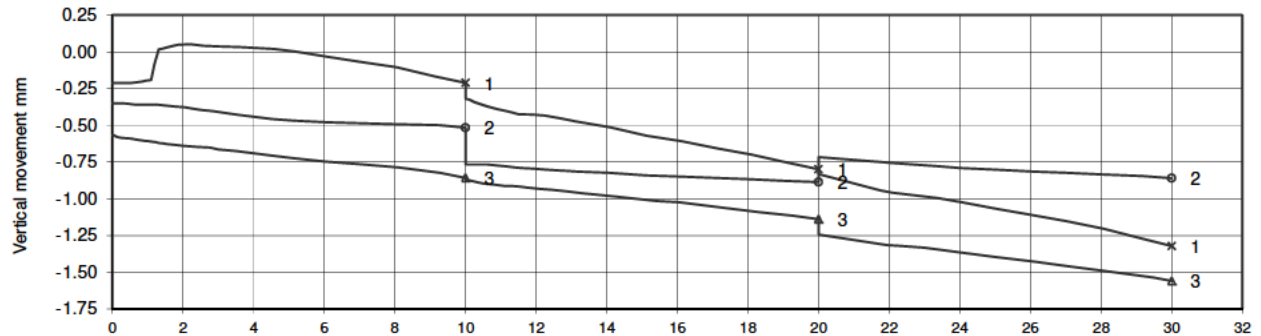
**Determination of shear strength by direct shear (Small shearbox apparatus)
(BS1377 : Part 7 : clause 4 : 1990)**

Project No	A9031-19	Sample Details:	Hole No.		ATK-CP-06	
Project Name	Havant Thicket Water Storage		Depth (m BGL)		4.00-4.45	
			Sample No	20	Type	UT
			ID			
			Spec Ref			

Consolidation stage(s)



Shearing stage(s)



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**Determination of shear strength by direct shear (Small shearbox apparatus)
(BS1377 : Part 7 : clause 4 : 1990)**

Project No	A9031-19	Sample Details:	Hole No.	ATK-CP-10
Project Name	Havant Thicket Water Storage		Depth (m BGL)	5.00-5.45
			Sample No	19
			Type	UT
			ID	
			Spec Ref	

Soil Description	Firm grey CLAY.
Specimen Type /Preparation	Undisturbed.

Specimen(s) nominally 60mm x 60mm square

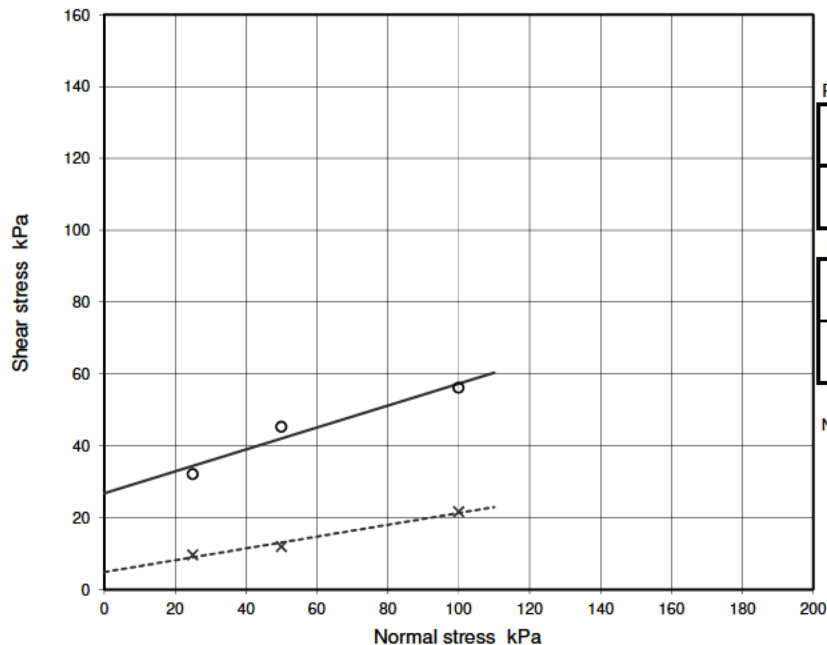
Test(s) carried out in submerged condition

Particle density, assumed 2.65 Mg/m³

Specimen Details		No.	1	2	3	4	5	6
Initial	Height	mm	25.2	25.2	25.2			
	Bulk Density	Mg/m ³	1.91	1.90	1.93			
	Water Content	%	27.9	28.8	27.6			
	Dry density	Mg/m ³	1.50	1.48	1.51			
	Voids ratio		0.772	0.792	0.755			
Consol ¹	Degree of Saturation	%	96	96	97			
	Consolidation / Normal Stress applied	kPa	25	50	100			
	Change in height during consolidation	mm	0.182	0.064	-0.356			
Shear see note 1	Voids ratio after consolidation		0.785	0.797	0.730			
	Voids ratio at end of test		0.830	0.804	0.725			
	Moisture content at end of test	%	31.3	30.3	27.4			
	Saturation at end of test	%	100	100	100			

Shearing stage

Rate of displacement	Peak	mm/min	0.038	0.038	0.038			
	Residual	mm/min						
Peak values, (o)	Relative displacement	mm	1.55	2.55	1.14			
	Shear stress	kPa	32.2	45.3	56.2			
Residual values, (x)	No. of reversals		2	2	2			
	Relative displacement	mm	20.00	16.00	20.00			
	Shear stress	kPa	9.7	12.0	21.7			



Shear Strength Parameters

Peak strength, (o)		Regression	Manual
c'	kPa	27	-
Ø'	degrees	17	-

Residual strength, (x)		Regression	Manual
c' _R	kPa	4.8	-
Ø' _R	degrees	9½	-

Notes :

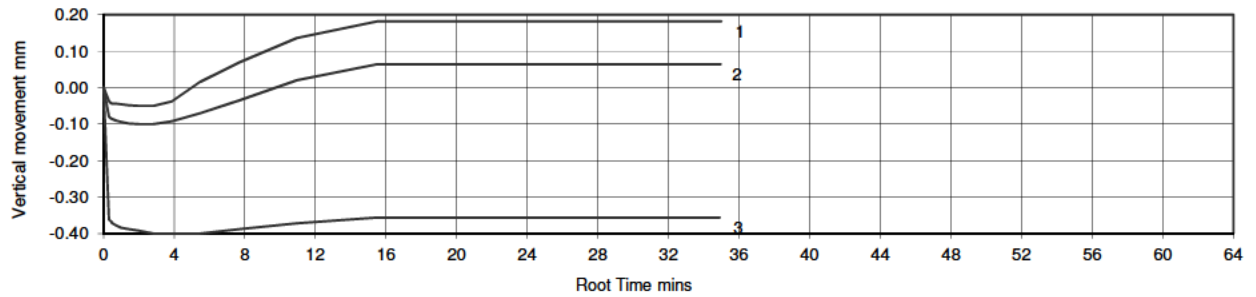
1. After shear values based on BS1377. Pt 7 cl. 4.6.1.6 using ØH calculated from consolidation and shear stages.

Ref SLR7.4 Rev 86.0 Feb18	 	Printed:10/02/2020 18:15	Figure SSB sheet 1 of 2
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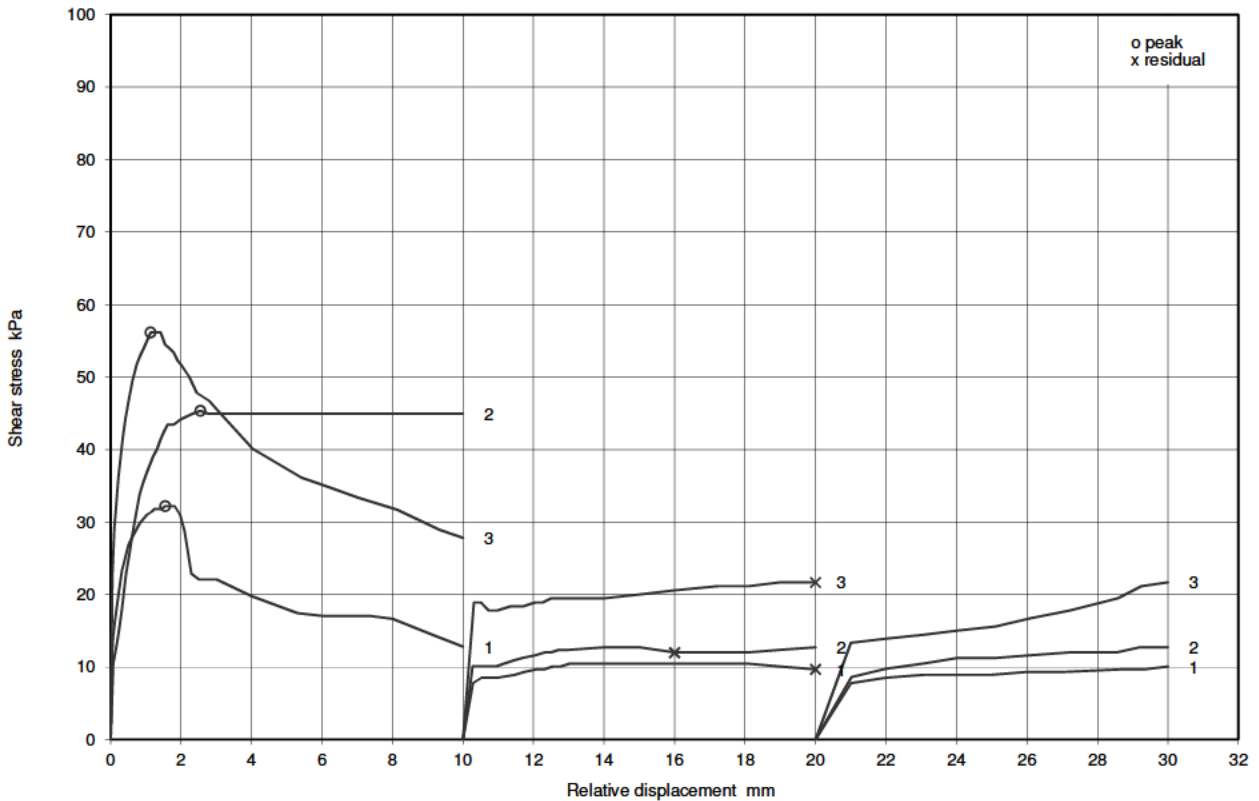
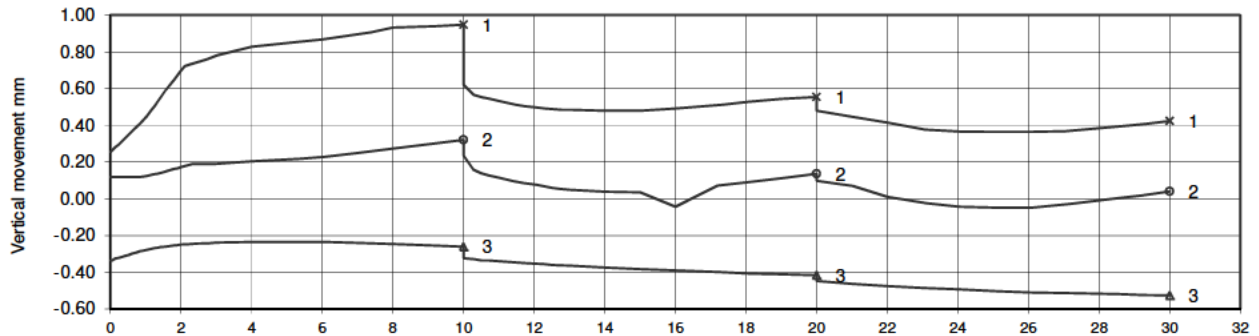
**Determination of shear strength by direct shear (Small shearbox apparatus)
(BS1377 : Part 7 : clause 4 : 1990)**

Project No	A9031-19	Sample Details:	Hole No.		ATK-CP-10	
Project Name	Havant Thicket Water Storage		Depth (m BGL)		5.00-5.45	
			Sample No	19	Type	UT
			ID			
			Spec Ref			

Consolidation stage(s)



Shearing stage(s)



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**Determination of shear strength by direct shear (Small shearbox apparatus)
(BS1377 : Part 7 : clause 4 : 1990)**

Project No	A9031-19	Sample Details:	Hole No.	ATK-CP-11
Project Name	Havant Thicket Water Storage		Depth (m BGL)	4.00
			Sample No	19
			Type	UT
			ID	
			Spec Ref	

Soil Description	Firm to stiff greyish brown slightly sandy CLAY.
Specimen Type /Preparation	Undisturbed.

Specimen(s) nominally 60mm x 60mm square

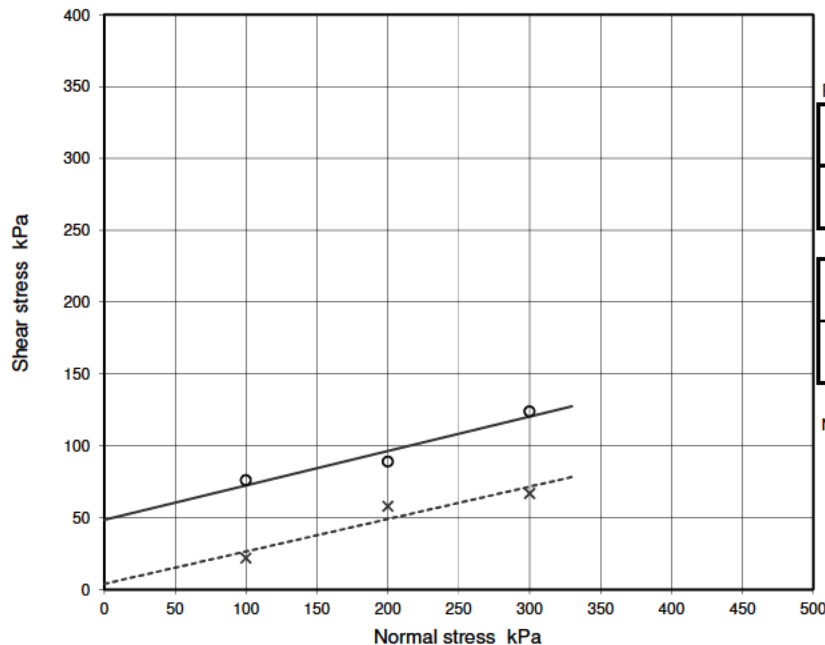
Test(s) carried out in submerged condition

Particle density, assumed 2.65 Mg/m³

Specimen Details		No.	1	2	3	4	5	6
Initial	Height	mm	25.2	25.2	25.2			
	Bulk Density	Mg/m ³	1.88	1.87	1.87			
	Water Content	%	29.5	29.9	29.7			
	Dry density	Mg/m ³	1.45	1.44	1.44			
	Voids ratio		0.827	0.843	0.837			
Consol ¹	Degree of Saturation	%	95	94	94			
	Consolidation / Normal Stress applied	kPa	100	200	300			
	Change in height during consolidation	mm	-0.432	-1.294	-1.244			
Shear see note 1	Voids ratio after consolidation		0.796	0.749	0.746			
	Voids ratio at end of test		0.813	0.728	0.678			
	Moisture content at end of test	%	30.7	27.5	25.6			
	Saturation at end of test	%	100	100	100			

Shearing stage

Rate of displacement	Peak	mm/min	0.041	0.041	0.041			
	Residual	mm/min	0.103	0.103	0.103			
Peak values, (o)	Relative displacement	mm	1.96	2.14	2.49			
	Shear stress	kPa	76.1	89.0	123.9			
Residual values, (x)	No. of reversals		2	2	2			
	Relative displacement	mm	30.00	30.00	30.00			
	Shear stress	kPa	21.9	57.9	67.0			



Shear Strength Parameters

Peak strength, (o)		Regression	Manual
c'	kPa	49	-
Ø'	degrees	13½	-

Residual strength, (x)		Regression	Manual
c' _R	kPa	3.9	-
Ø' _R	degrees	12½	-

Notes :

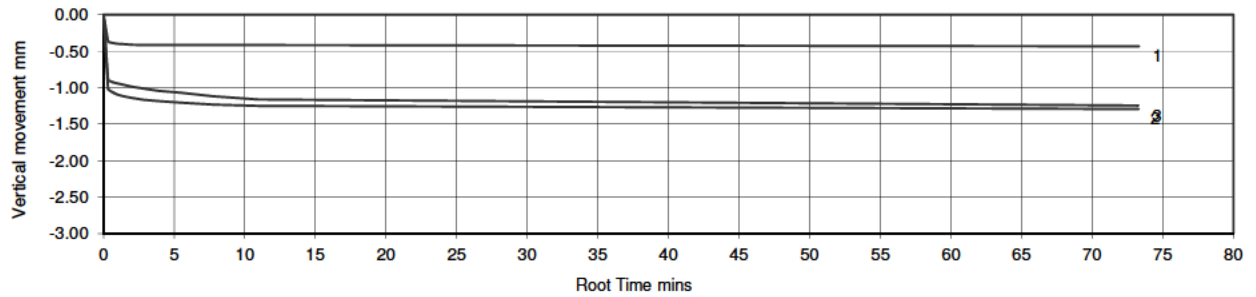
1. After shear values based on BS1377. Pt 7 cl. 4.6.1.6 using ØH calculated from consolidation and shear stages.

Ref SLR7.4 Rev 86.0 Feb18	  0001	Printed:28/02/2020 10:15	Figure SSB sheet 1 of 2
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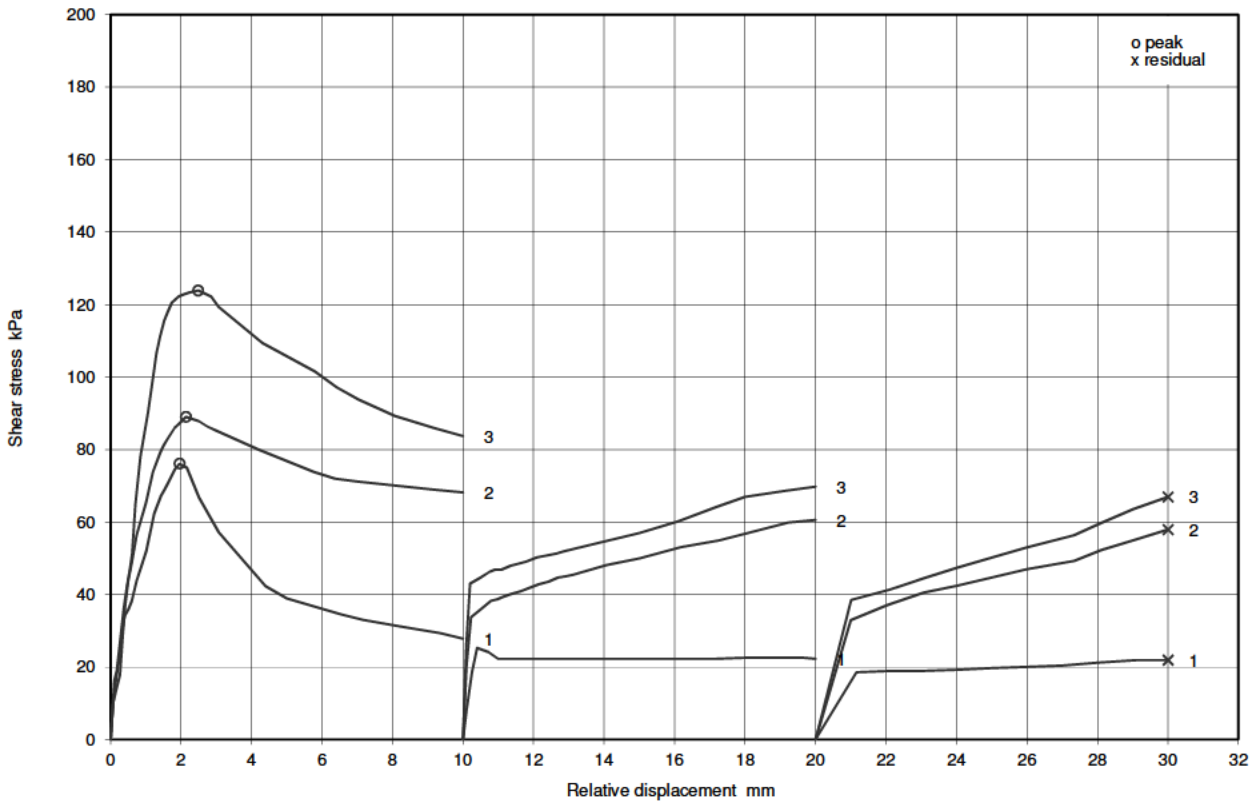
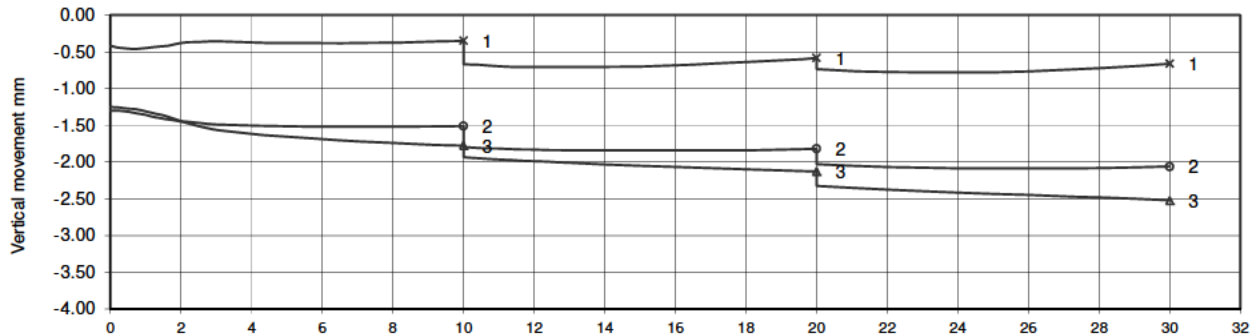
**Determination of shear strength by direct shear (Small shearbox apparatus)
(BS1377 : Part 7 : clause 4 : 1990)**

Project No	A9031-19	Sample Details:	Hole No.		ATK-CP-11		
Project Name	Havant Thicket Water Storage		Depth (m BGL)		4.00		
			Sample No	19	Type	UT	
			ID				
			Spec Ref				

Consolidation stage(s)



Shearing stage(s)



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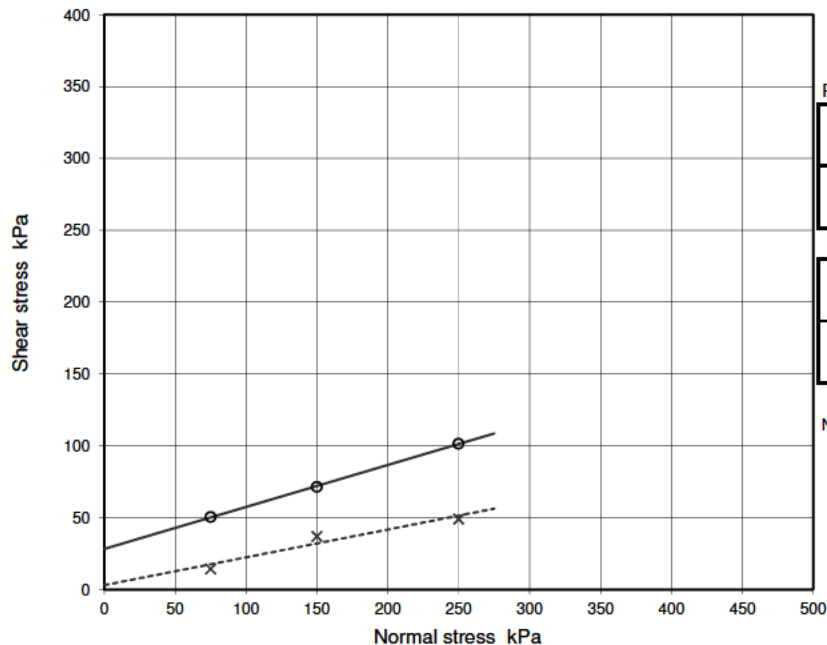
**Determination of shear strength by direct shear (Small shearbox apparatus)
(BS1377 : Part 7 : clause 4 : 1990)**

Project No	A9031-19	Sample Details:	Hole No.	ATK-CP-15
Project Name	Havant Thicket Water Storage		Depth (m BGL)	3.00
			Sample No	14
			Type	UT
			ID	
			Spec Ref	

Soil Description	Firm brownish grey CLAY.	Specimen(s) nominally 60mm x 60mm square
Specimen Type /Preparation	Undisturbed.	Test(s) carried out in submerged condition
		Particle density, assumed 2.65 Mg/m ³

Specimen Details		No.	1	2	3	4	5	6
Initial	Height	mm	25.2	25.2	25.2			
	Bulk Density	Mg/m ³	1.88	1.87	1.86			
	Water Content	%	31.5	32.3	32.5			
	Dry density	Mg/m ³	1.43	1.42	1.41			
	Voids ratio		0.850	0.870	0.884			
Consol ¹	Degree of Saturation	%	98	98	97			
	Consolidation / Normal Stress applied	kPa	75	150	250			
	Change in height during consolidation	mm	-0.310	-0.598	-1.052			
Shear see note 1	Voids ratio after consolidation		0.827	0.826	0.805			
	Voids ratio at end of test		0.838	0.698	0.720			
	Moisture content at end of test	%	31.6	26.3	27.2			
	Saturation at end of test	%	100	100	100			

Shearing stage								
Rate of displacement	Peak	mm/min	0.032	0.032	0.032			
	Residual	mm/min	0.081	0.081	0.081			
Peak values, (o)	Relative displacement	mm	2.25	1.50	2.84			
	Shear stress	kPa	50.4	71.4	101.5			
Residual values, (x)	No. of reversals		2	2	2			
	Relative displacement	mm	10.35	30.00	30.00			
	Shear stress	kPa	14.5	37.2	49.1			



Shear Strength Parameters

Peak strength, (o)		Regression	Manual
c'	kPa	28	-
Ø'	degrees	16½	-
Residual strength, (x)			
c' _R	kPa	3.0	-
Ø' _R	degrees	11	-

Notes :

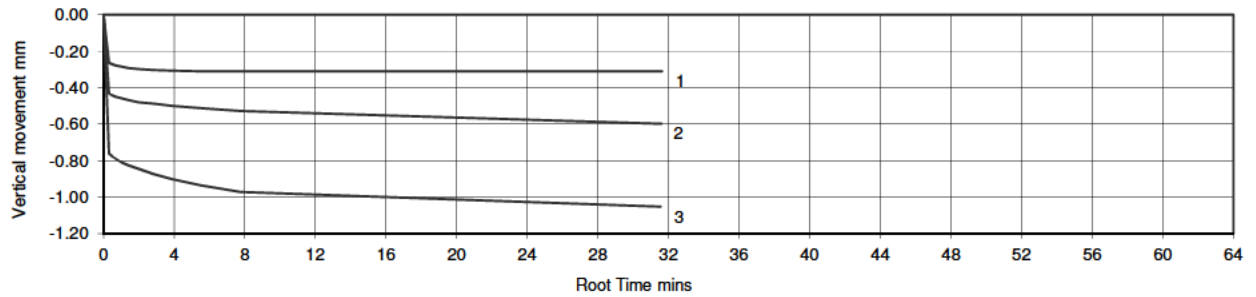
1. After shear values based on BS1377. Pt 7 cl. 4.6.1.6 using ØH calculated from consolidation and shear stages.

Ref SLR7.4 Rev 86.0 Feb18	  0001	Printed:28/02/2020 10:16	Figure SSB sheet 1 of 2
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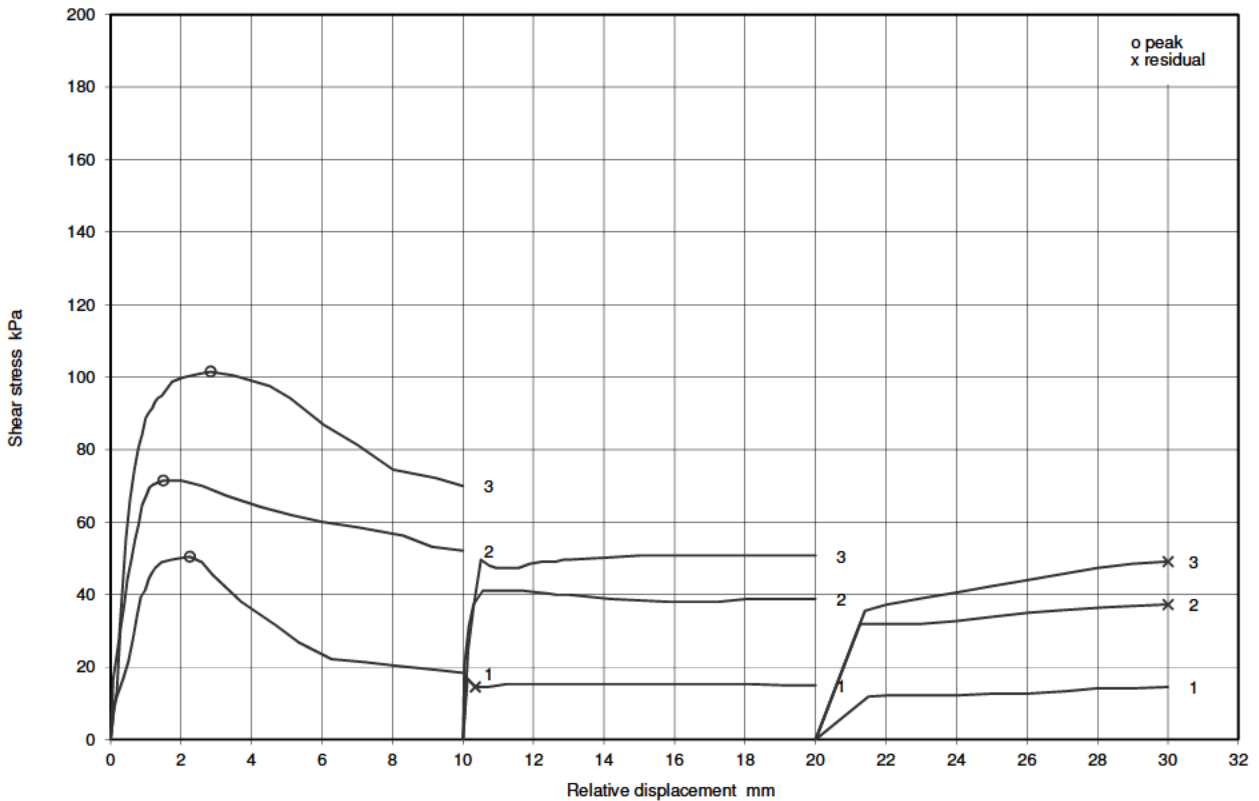
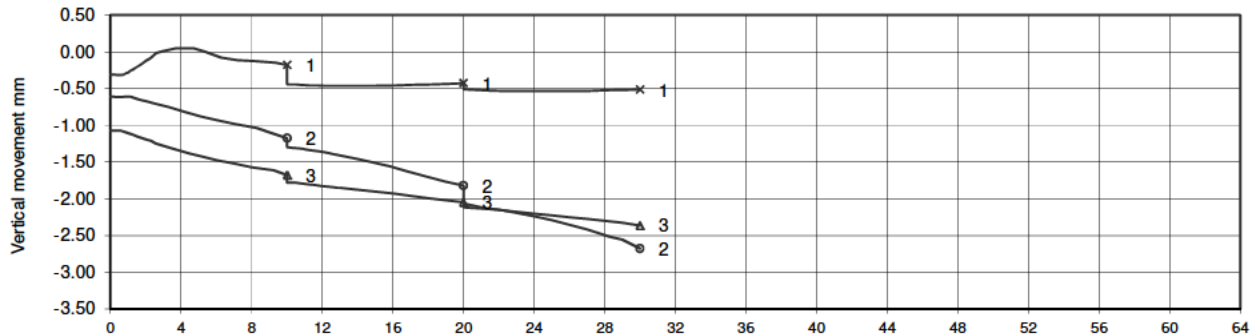
**Determination of shear strength by direct shear (Small shearbox apparatus)
(BS1377 : Part 7 : clause 4 : 1990)**

Project No	A9031-19	Sample Details:	Hole No.		ATK-CP-15		
Project Name	Havant Thicket Water Storage		Depth (m BGL)		3.00		
			Sample No	14	Type	UT	
			ID				
			Spec Ref				

Consolidation stage(s)



Shearing stage(s)



Ref

SLR7.4
Rev 86.0
Feb18



Printed:28/02/2020 10:16

Figure

SSB

sheet 2 of 2

Determination of residual shear strength using ring shear apparatus

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-10
		Sample Depth (m BGL)	7.00 - 7.45
	A9031-1920191122013450	Sample Type and No	UT26
		Specimen Ref	

Soil Description Very stiff thinly laminated dark brown slightly sandy CLAY.

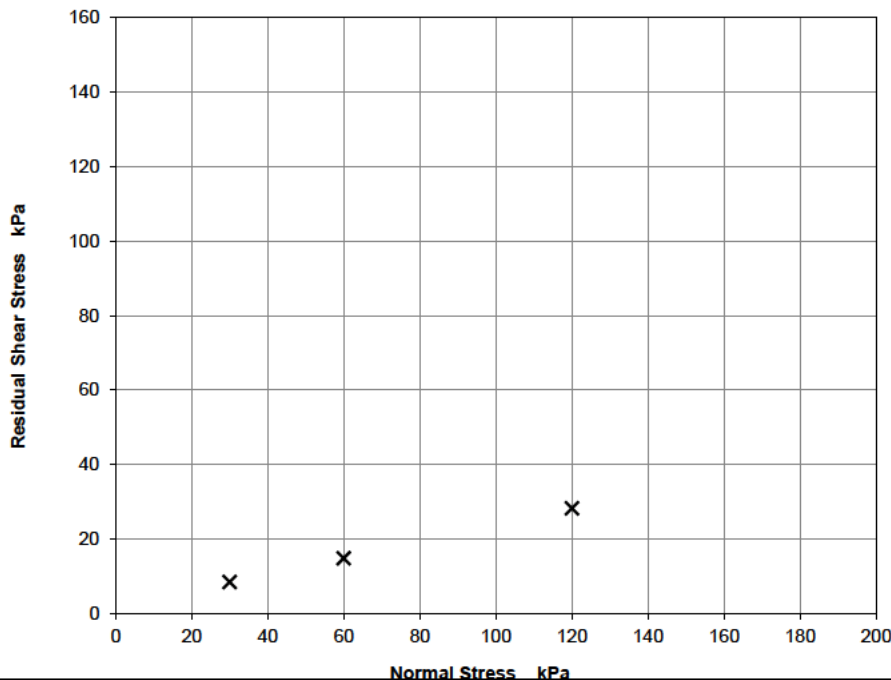
Specimen Description

Preparation Details -1.18mm material. Remoulded into base assembly at as received moisture content.

Specimen Details Material removed 0 % above 0 mm sieve

Outer diameter	100.0	mm
Inner diameter	70.0	mm
Height	5.00	mm
Bulk Density	2.23	Mg/m³
Moisture Content (trimmings)	21.0	%
Dry density	1.84	Mg/m³
Moisture content after test	29.0	%

		Stage	1	2	3			
Consolidation	Normal Stress applied		30	60	120			kPa
	Change in height during consolidation		-0.020	-0.054	-0.118			mm
Shearing	Number of rotations prior to shearing							
	Distance between force application points		150.0	150.0	150.0			mm
	Rate of rotation/displacement applied	angular	0.120	0.120	0.120			o/min
		linear	0.089	0.089	0.089			mm/min
Residual values	Corrected mean linear displacement, cumulative		14.0	28.0	42.7			mm
	Residual Shear stress		8.4	14.8	28.2			kPa
	Vertical Movement at residual shear stress		0.02	-0.05	-0.04			mm



Residual Shear Strength Parameters

c'R Assumed zero

φ'R 13.5 °

General Remarks

φ'r derived by linear regression assuming c'R = 0

Water added to cell immediately after first load applied

QA Ref
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May 17



Project No A9031-19
Project Name HAVANT THICKET WATER STORAGE

Figure

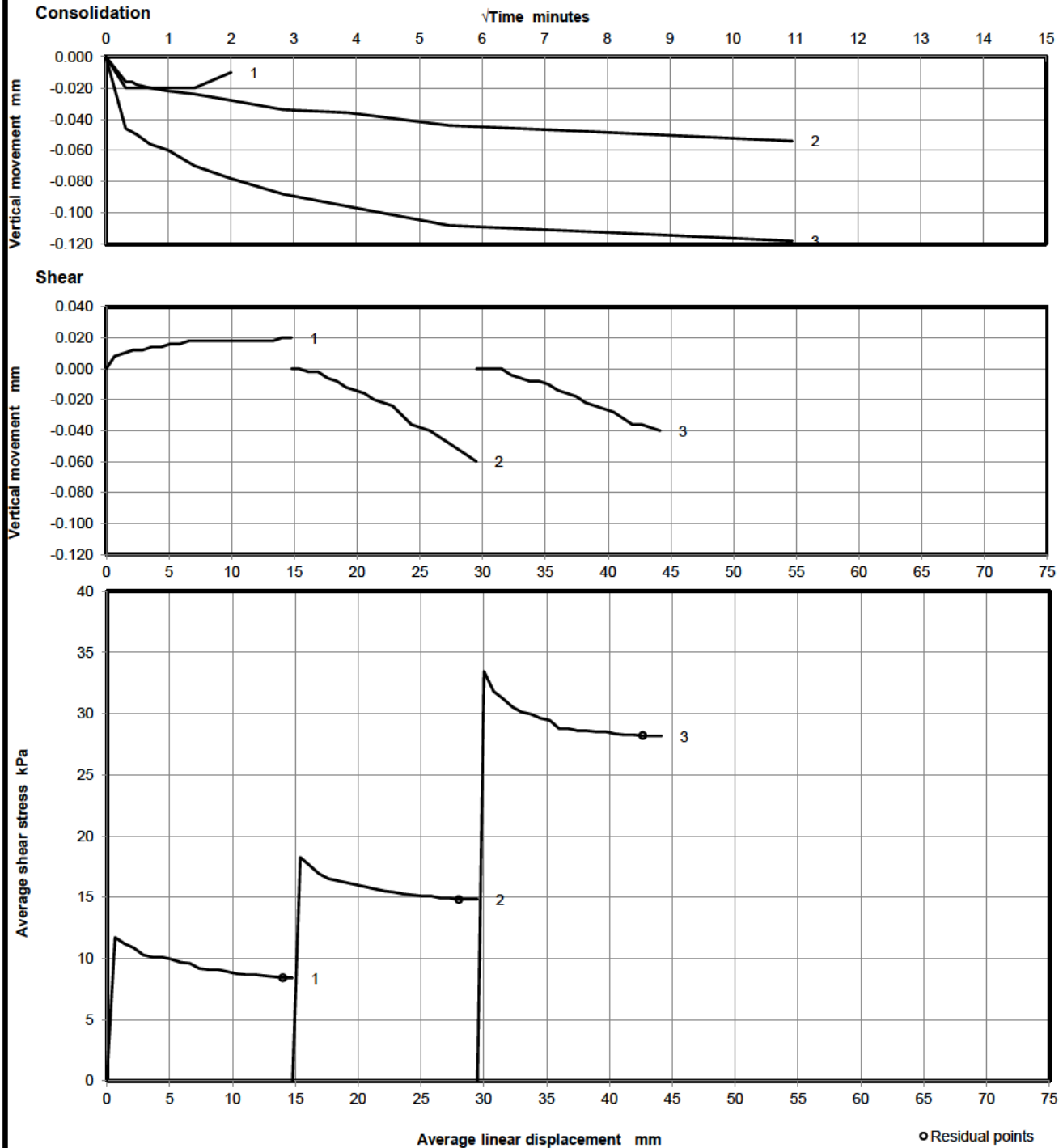
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Determination of residual shear strength using ring shear apparatus

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-10
	A9031-1920191122013450	Sample Depth (m BGL)	7.00 - 7.45
		Sample Type and No	UT26
		Specimen Ref	



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Figure

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Determination of residual shear strength using ring shear apparatus

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-11
		Sample Depth (m BGL)	4.60 - 5.00
	A9031-1920191219105047	Sample Type and No	B21
		Specimen Ref	

Soil Description Greyish brown CLAY.

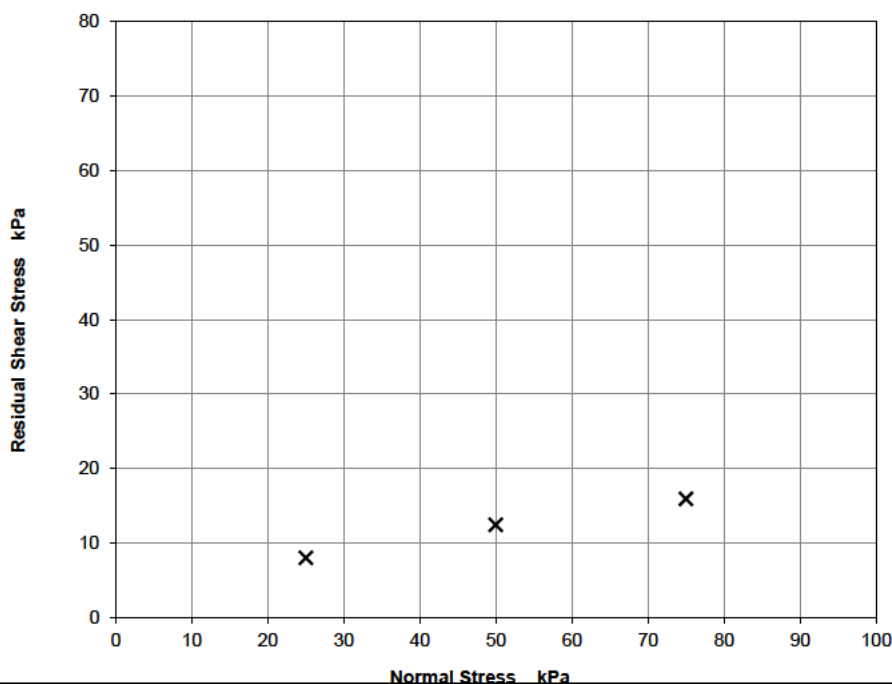
Specimen Description

Preparation Details -1.18mm material. Remoulded into base assembly at as received moisture content.

Specimen Details Material removed 0 % above 0 mm sieve

Outer diameter	100.0	mm
Inner diameter	70.0	mm
Height	5.00	mm
Bulk Density	1.94	Mg/m³
Moisture Content (trimmings)	36.0	%
Dry density	1.43	Mg/m³
Moisture content after test	44.0	%

		Stage	1	2	3			
Consolidation	Normal Stress applied		25	50	75			kPa
	Change in height during consolidation		-0.006	-0.076	-0.080			mm
Shearing	Number of rotations prior to shearing							
	Distance between force application points		150.0	150.0	150.0			mm
	Rate of rotation/displacement applied	angular	0.120	0.120	0.120			o/min
		linear	0.089	0.089	0.089			mm/min
Residual values	Corrected mean linear displacement, cumulative		14.0	28.8	43.5			mm
	Residual Shear stress		8.0	12.4	15.9			kPa
	Vertical Movement at residual shear stress		-0.01	-0.03	-0.05			mm



Residual Shear Strength Parameters

c'R Assumed zero

φ'R 13.0 °

General Remarks

φ'r derived by linear regression assuming c'R = 0

Water added to cell immediately after first load applied

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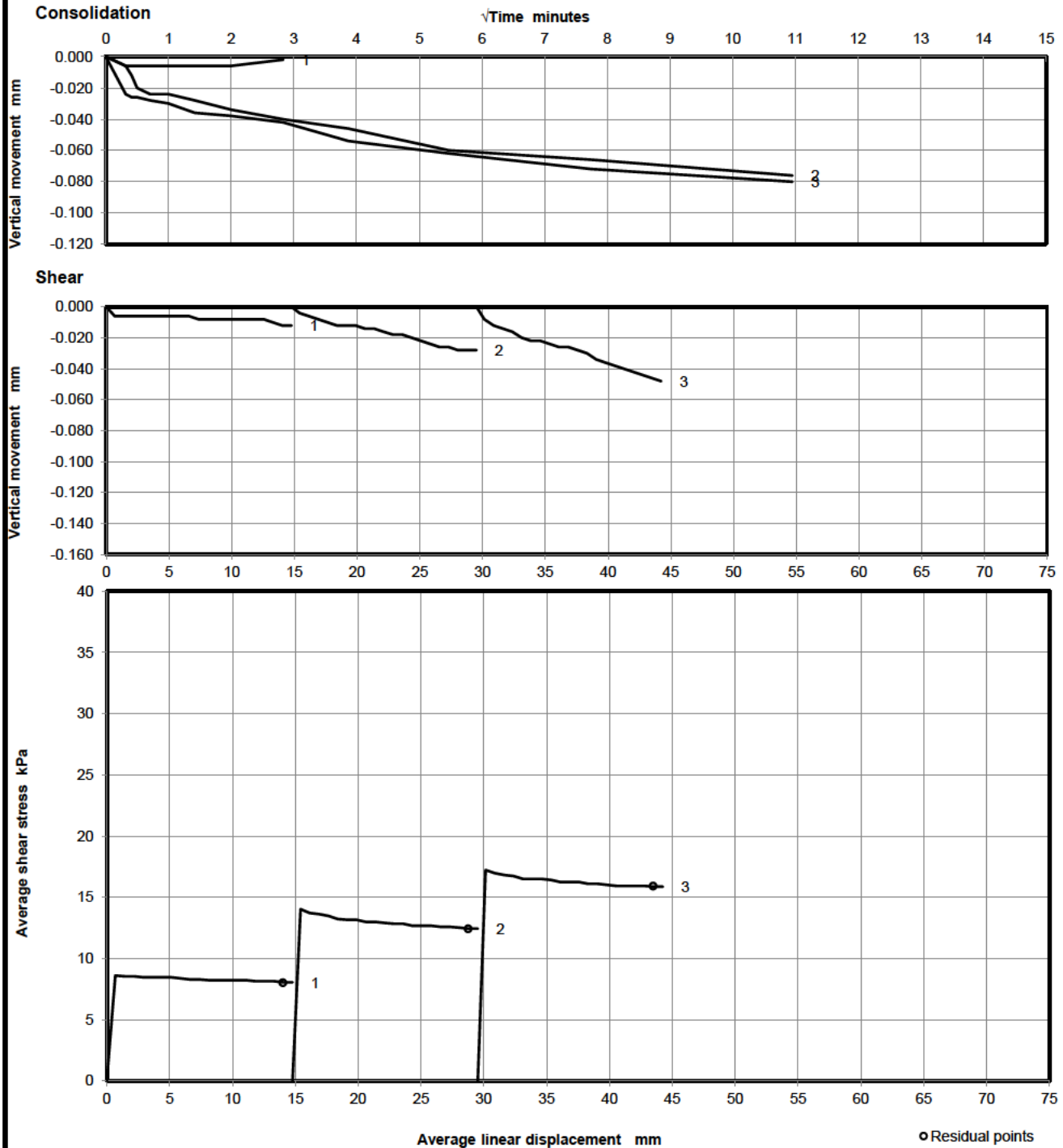
Figure

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Determination of residual shear strength using ring shear apparatus

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-11
	A9031-1920191219105047	Sample Depth (m BGL)	4.60 - 5.00
		Sample Type and No	B21
		Specimen Ref	



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Figure

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Determination of residual shear strength using ring shear apparatus

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-13A
		Sample Depth (m BGL)	3.50 - 4.00
	A9031-1920191127033738	Sample Type and No	B17
		Specimen Ref	

Soil Description Brown silty CLAY.

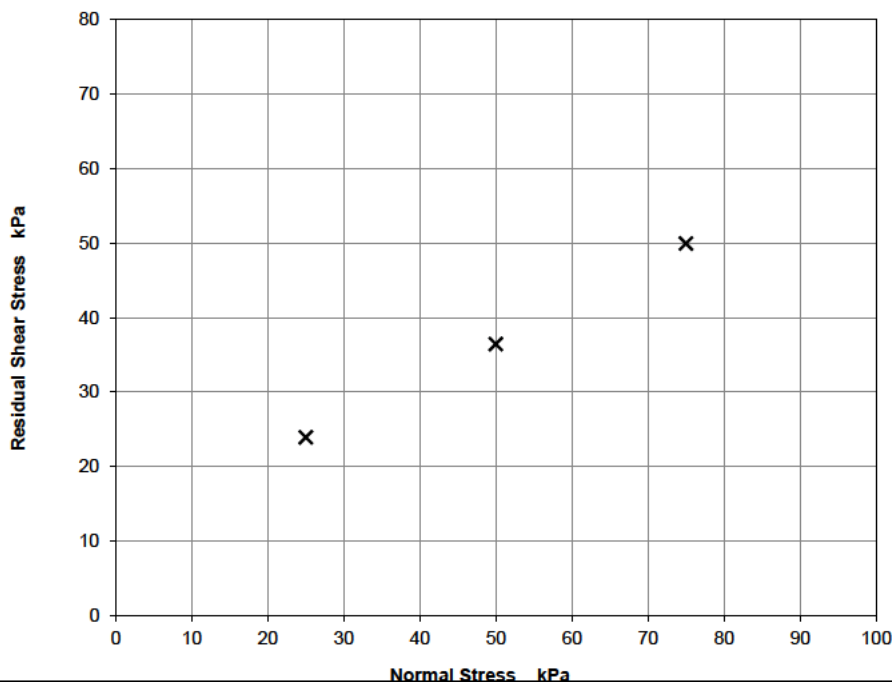
Specimen Description

Preparation Details -1.18mm material. Remoulded into base assembly at as received moisture content.

Specimen Details Material removed 0 % above 0 mm sieve

Outer diameter	100.0	mm
Inner diameter	70.0	mm
Height	5.00	mm
Bulk Density	2.05	Mg/m³
Moisture Content (trimmings)	28.0	%
Dry density	1.60	Mg/m³
Moisture content after test	28.0	%

		Stage	1	2	3			
Consolidation	Normal Stress applied		25	50	75			kPa
	Change in height during consolidation		0.000	0.000	0.000			mm
Shearing	Number of rotations prior to shearing							
	Distance between force application points		150.0	150.0	150.0			mm
	Rate of rotation/displacement applied	angular	0.120	0.120	0.120			o/min
		linear	0.089	0.089	0.089			mm/min
Residual values	Corrected mean linear displacement, cumulative		12.5	25.6	40.9			mm
	Residual Shear stress		23.9	36.4	49.9			kPa
	Vertical Movement at residual shear stress		0.04	0.03	0.05			mm



Residual Shear Strength Parameters

c'R Assumed zero

φ'R 35.0 °

General Remarks

φ'r derived by linear regression assuming c'R = 0

Water added to cell immediately after first load applied

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SLR 7.6
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Project Name HAVANT THICKET WATER STORAGE

Figure

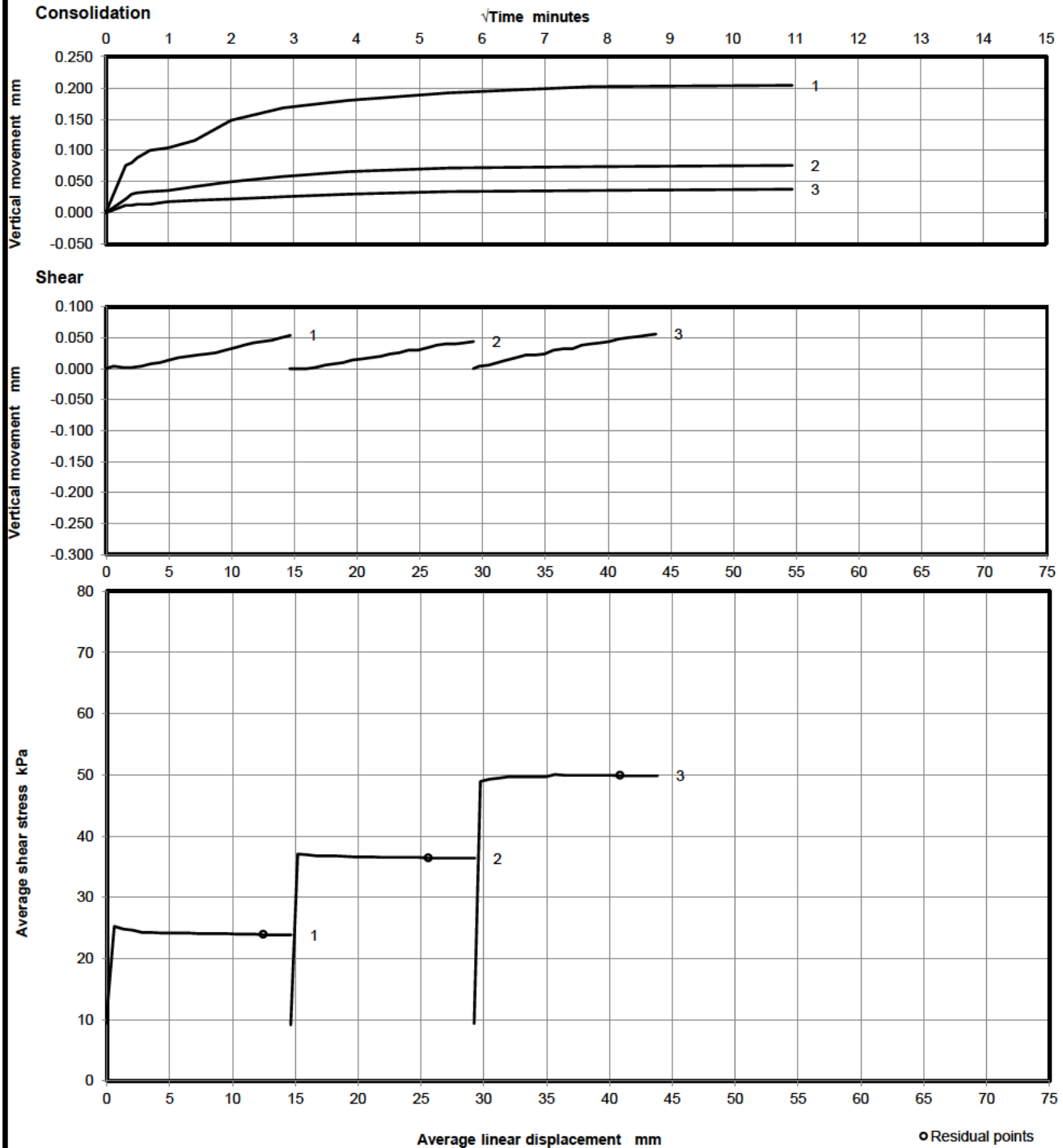
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Determination of residual shear strength using ring shear apparatus

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-13A
	A9031-1920191127033738	Sample Depth (m BGL)	3.50 - 4.00
		Sample Type and No	B17
		Specimen Ref	



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Project Name HAVANT THICKET WATER STORAGE

Figure

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Determination of residual shear strength using ring shear apparatus

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-14
		Sample Depth (m BGL)	2.00 - 2.45
	A9031-1920191218101917	Sample Type and No	UT7
		Specimen Ref	

Soil Description Soft to firm brown slightly sandy CLAY.

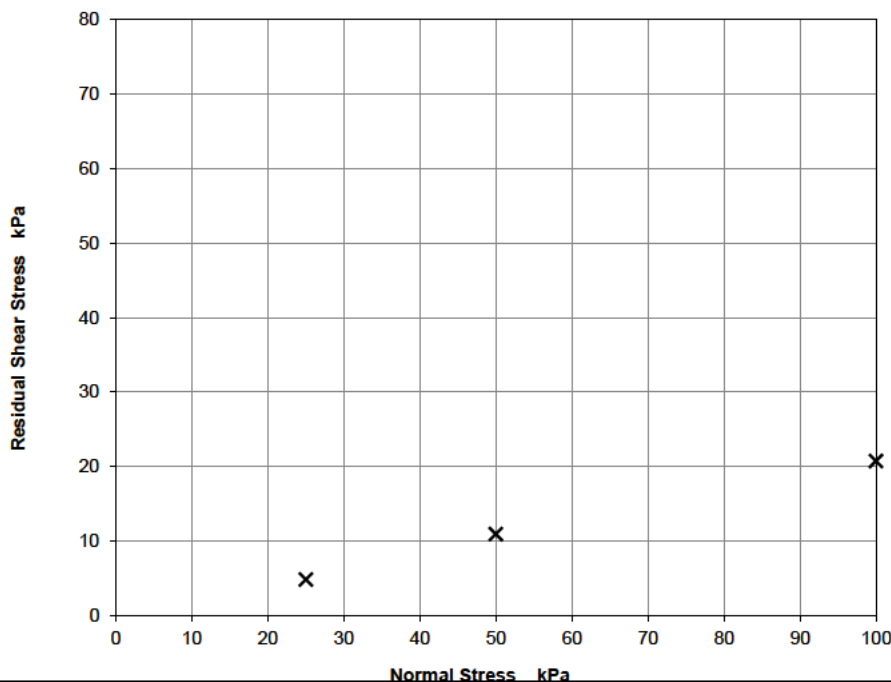
Specimen Description

Preparation Details -1.18mm material. Remoulded into base assembly at as received moisture content.

Specimen Details Material removed 0 % above 0 mm sieve

Outer diameter	100.0	mm
Inner diameter	70.0	mm
Height	5.00	mm
Bulk Density	2.06	Mg/m³
Moisture Content (trimmings)	28.0	%
Dry density	1.61	Mg/m³
Moisture content after test	34.0	%

		Stage	1	2	3			
Consolidation	Normal Stress applied		25	50	100			kPa
	Change in height during consolidation		-0.020	-0.064	-0.126			mm
Shearing	Number of rotations prior to shearing							
	Distance between force application points		150.0	150.0	150.0			mm
	Rate of rotation/displacement applied	angular	0.120	0.120	0.120			o/min
		linear	0.089	0.089	0.089			mm/min
Residual values	Corrected mean linear displacement, cumulative		15.6	30.4	45.1			mm
	Residual Shear stress		4.8	10.9	20.7			kPa
	Vertical Movement at residual shear stress		0.02	-0.04	-0.07			mm



Residual Shear Strength Parameters

c'R Assumed zero

φ'R 12.0 °

General Remarks

φ'r derived by linear regression assuming c'R = 0

Water added to cell immediately after first load applied

QA Ref
SLR 7.6
Rev 2.8
May 17



Project No A9031-19
Project Name HAVANT THICKET WATER STORAGE

Figure

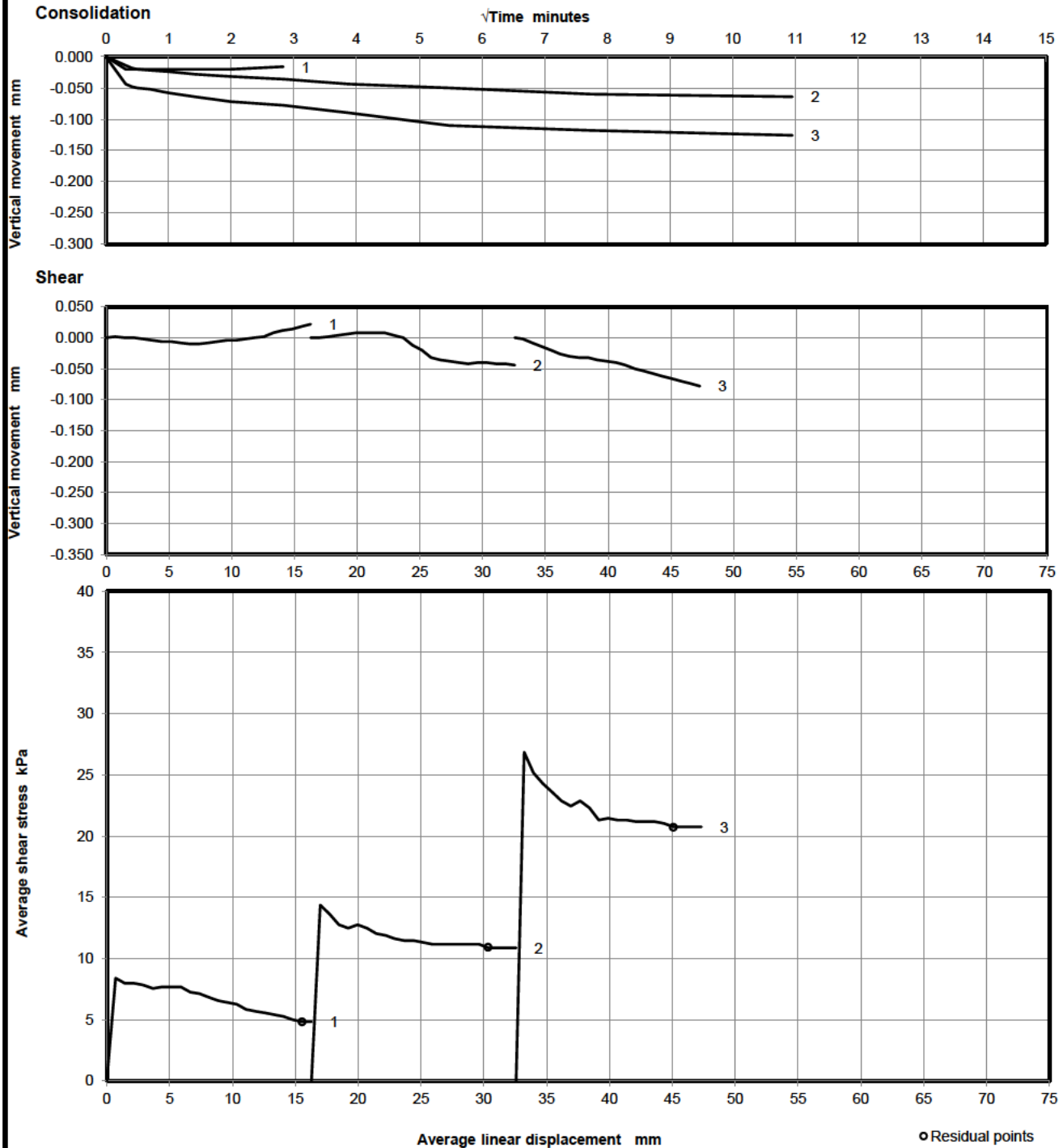
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Determination of residual shear strength using ring shear apparatus

Sample Details:	SAMPLE ID:	Hole No	ATK-CP-14
	A9031-1920191218101917	Sample Depth (m BGL)	2.00 - 2.45
		Sample Type and No	UT7
		Specimen Ref	



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Project Name HAVANT THICKET WATER STORAGE

Figure

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TEST REPORT

DETERMINATION OF DISPERSIBILITY - P NHOLE METHOD - BS1377: Part 5: 1990: CLAUSE 6.2

Project No	A9031-19	Sample Details:	Hole No.	ATK-CP-06
Project Name	HAVANT THICKET WATER STORAGE		Depth (m BGL)	4.00-4.45
			No.	20
			Type	UT
			ID	

Soil Description : Red mottled grey slightly sandy CLAY.

Natural Moisture Content (%) :

Liquid Limit (%) :

Plastic Limit (%) :

The sample was passed over a 2.00mm sieve and no coarse material was removed.

Test Specimen Details

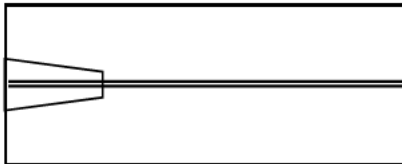
Moisture Content (%) : 22

Bulk Density (Mg/m3) : 2.020

Dry Density (Mg/m3) : 1.660

Head of Water (mm)	Rate of Flow (mL/s)	Duration (s)	Discharge Appearance
50	0.26	21.16	Clear
180	0.28	21.37	Clear
380	1.15	21.32	Clear
1020	1.63	14.43	Clear

The diameter of the pinhole showed no significant measurable change.



The soil would be classified as ND1.

SLR
5.6.2
Iss/Rev 2.0
19-Apr-2018



Approved

SR

Date

10-Feb

TEST REPORT

DETERMINATION OF DISPERSIBILITY - P NHOLE METHOD - BS1377: Part 5: 1990: CLAUSE 6.2

Project No	A9031-19	Sample Details:	Hole No.	ATK-CP-06
Project Name	HAVANT THICKET WATER STORAGE		Depth (m BGL)	6.00
			No.	27
			Type	UT
			ID	

Soil Description : Brown slightly sandy CLAY.

Natural Moisture Content (%) :

Liquid Limit (%) :

Plastic Limit (%) :

The sample was passed over a 2.00mm sieve and no coarse material was removed.

Test Specimen Details

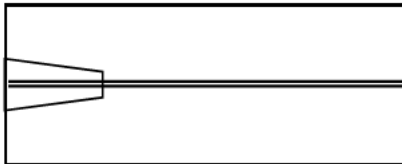
Moisture Content (%) : 20

Bulk Density (Mg/m3) : 2.000

Dry Density (Mg/m3) : 1.670

Head of Water (mm)	Rate of Flow (mL/s)	Duration (s)	Discharge Appearance
50	0.29	20.38	Clear
180	0.41	20.82	Clear
380	0.54	21.21	Clear
1020	1.28	20.31	Clear

The diameter of the pinhole showed no significant measurable change.



The soil would be classified as ND1.

SLR
5.6.2
Iss/Rev 2.0
19-Apr-2018



Approved

SR

Date

10-Feb