PREFACE SHEET

SF07-0915

HODEL CONSULTING ENGINEERS
The Gate House | Bays 2&3 Pattenden Lane
Marden | Tonbridge | Kent | TN12 9QS
Tel: 01732 617555 | Email: mail@hodel.uk

Project No.
22-199

Project Title
10 Grinstead Lane

Sheet Ref.	Prepared By	Checked	Date
	R.Rampton	JRH	21/10/22

Calculations	B/Schedule	Bill of Quant.	Specification

Soakaway Sizing as

Plot 1

Rear Soakaway (roof area) SA2

Geocellular soakaway with a minimum 95% void ratio.

Drained area = 83m^2

Length = 4.50m

Width = 0.50m

Depth = 1.60m (below lowest incoming pipe)

Infiltration Rate = 2.74x10^{-6}m/s

Front Soakaway (driveway) SA1

Geocellular soakaway with a minimum 95% void ratio.

Drained area = 40m^2

Length = 3.00m

Width = 0.50m

Depth = 1.20m (below lowest incoming pipe)

Infiltration Rate = 2.74x10^{-6}m/s

Plot 2

Rear Soakaway (roof area) SA2

Geocellular soakaway with a minimum 95% void ratio.

Drained area = 83m^2

Length = 4.50m

Width = 0.50m

Depth = 1.60m (below lowest incoming pipe)

Infiltration Rate = 2.74x10^{-6}m/s

Front Soakaway (driveway) SA1

Geocellular soakaway with a minimum 95% void ratio.

Drained area = 40m^2

Length = 3.00m

Width = 0.50m

Depth = 1.20m (below lowest incoming pipe)

Infiltration Rate = 2.74x10^{-6}m/s

#1

FIELD SOAKAGE TEST DATA SHEET

HODEL CONSULTING ENGINEERS

Pit length = 1.6 m

Pit width = 0.7 m

Pit depth = 1.7 m

Depth to top of water from ground level = 0.7 m

Start time of test 10:45 AM 10/10/22

End time of test 09:00 AM 11/10/22

Weather conditions DRY, SUNNY

Observations and comments:

Soil type (highlight as necessary): gravel sand silt clay.

Please state depth of various strata. 500 MM – CHALK
200 MM – CLAY
1M – DIRT / TOPSOIL

General instructions:

1. Dig a pit 1-3m long, approx. 2m deep and 300-1000mm wide. Trim the sides and base to make a regular shape as possible. Record the excavated dimensions above.
2. Pour water in rapidly, use a bowser – do not use a hose to fill the hole as this will ruin the test. Ideally fill the pit, but if not possible, 1m depth is acceptable.
3. Measure the depth of water until empty over time using the table overleaf.
4. Undertake the test at least three times – this will likely be on a second and third day.

Hodel job No._____.

Date._____.

#1

FIELD SOAKAGE TEST DATA SHEET

Depth to Water Level m Below Ground Level (m BGL.)	Time (Min.)
	0
	2
	4
	6
	8
	10
	12
	14
	16
	18
	20
	22
	24
	26
	28
	30
	35
	40
	45
	50
	55
0.925	**60** (1hr)
	65
	70
	75
	80
	85
	90
	95
	100
	105
	110
	115
1.025	**120** (2 hrs)
	130
	140
	150
	160
	170
1.125	**180** (3 hrs)
	190
	200
	210
	220
	230

Depth to Water Level (m BGL.)	Time (Min.)
1.2	**240** (4 hrs)
	260
	280
1.250	**300** (5 hrs)
	320
	340
1.3	**360** (6 hrs)
	380
	400
1.325	**420** (7 hrs)
	440
	460
1.350	**480** (8 hrs)
	500
1.375	9 HRS
1.4	10 HRS
1.425	11 HRS
1.450	12 HRS
1.475	13 HRS
1.5	14 HRS
1.525	15 HRS
1.550	16 HRS
1.575	17 HRS
1.6	18 HRS
1.625	19 HRS
1.650	20 HRS
1.675	21 HRS
1.7	22 HRS

Hodel job No._____.
Date._____.

XX3

FIELD SOAKAGE TEST DATA SHEET

Depth to Water Level m Below Ground Level (m BGL.)	Time (Min.)
	0
	2
	4
	6
	8
	10
	12
	14
	16
	18
	20
	22
	24
	26
	28
	30
	35
	40
	45
	50
	55
0.880	**60** (1hr)
	65
	70
	75
	80
	85
	90
	95
	100
	105
	110
	115
0.980	**120** (2 hrs)
	130
	140
	150
	160
	170
1.055	**180** (3 hrs)
	190
	200
	210
	220
	230

Depth to Water Level (m BGL.)	Time (Min.)
1.115	**240** (4 hrs)
	260
	280
1.160	**300** (5 hrs)
	320
	340
1.2	**360** (6 hrs)
	380
	400
1.230	**420** (7 hrs)
	440
	460
1.260	**480** (8 hrs)
	500
1.290	9 HRS
1.315	10 HRS
1.335	11 H.
1.355	12 H.
1.375	13 H.
1.395	14 H.
1.415	15 H.
1.435	16 H.
1.455	17 H.
1.475	18 H.
1.495	19 H.
1.515	20 H.
1.535	21 H.
1.555	22 H.
1.575	23 H.
1.595	24 H
1.615	25 H
1.635	26 H
1.655	27 H
1.674	28 H
1.690	29 H
1.7	29H 40 MIN

Hodel job No._____.

Date._____.

#3

START TIME OF TEST — 11:45 AM
12/10/22

END TIME OF TEST — 17:25 PM
13/10/22

WEATHER CONDITIONS —

DRY, SUNNY - 12/10/22

LIGHT RAIN, DRIZZLE 5AM - 11:45 AM
13/10/22

#2

FIELD SOAKAGE TEST DATA SHEET

Depth to Water Level m Below Ground Level (m BGL.)	Time (Min.)
	0
	2
	4
	6
	8
	10
	12
	14
	16
	18
	20
	22
	24
	26
	28
	30
	35
	40
	45
	50
	55
0.925	**60** (1hr)
	65
	70
	75
	80
	85
	90
	95
	100
	105
	110
	115
1.010	**120** (2 hrs)
	130
	140
	150
	160
	170
1.075	**180** (3 hrs)
	190
	200
	210
	220
	230

Depth to Water Level (m BGL.)	Time (Min.)
1.130	**240** (4 hrs)
	260
	280
1.175	**300** (5 hrs)
	320
	340
1.220	**360** (6 hrs)
	380
	400
1.250	**420** (7 hrs)
	440
	460
1.275	**480** (8 hrs)
	500
1.3	9 HRS
1.325	10 HRS
1.350	11 HRS
1.375	12 HRS
1.4	13 HRS
1.425	14 HRS
1.450	15 HRS
1.475	16 HRS
1.5	17 HRS
1.525	18 HRS
1.550	19 HRS
1.575	20 HRS
1.6	21 HRS
1.625	22 HRS
1.650	23 HRS
1.675	24 HRS
1.690	25 HRS
1.7	25 H 30 MIN.

Hodel job No._____.
Date._____.

#2

START TIME OF TEST – 10:00 AM
11/10/22

END TIME OF TEST – 11:30 AM
12/10/22

WEATHER CONDITIONS – DRY/SUNNY





TRADE SERIES





SOIL INFILTRATION RATE

DT05-0915

HODEL CONSULTING ENGINEERS
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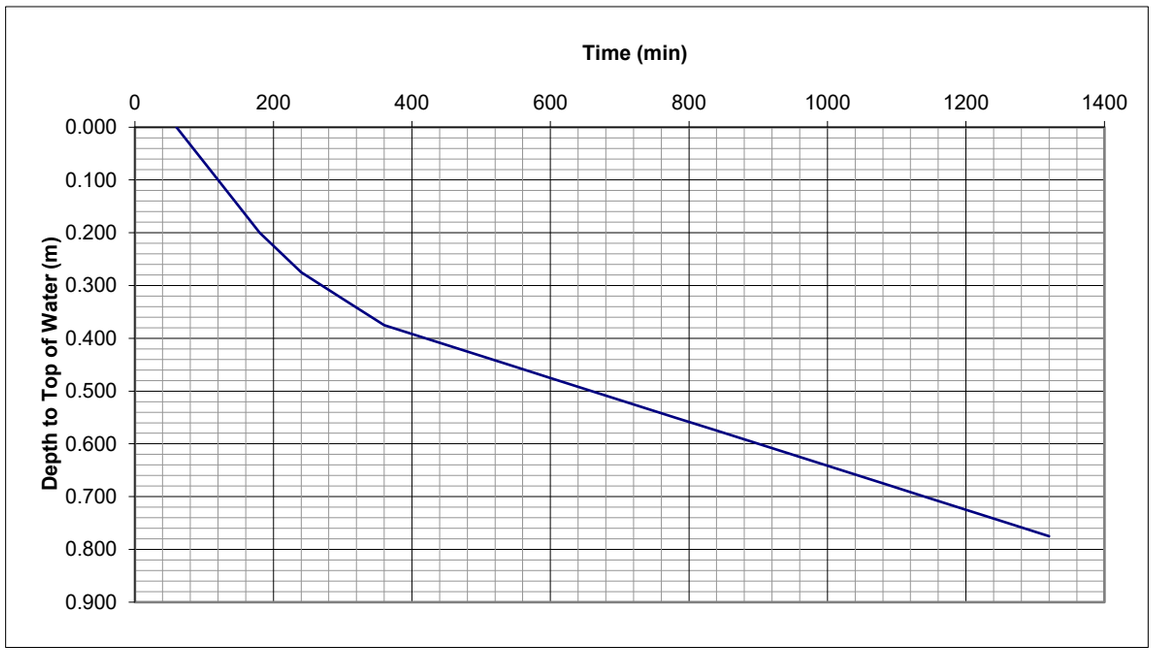
Tel: 01732 617555
Email: mail@hodel.uk

Project No:	**22-199**	Sheet No.	Test 1
Made By:	**R.R**	Revision:	-
Date:	**21/10/2022**	Project:	10 Grinstead Lane

Test 1 of 3

Length (m):	1.60		
Width (m):	0.70	**Depth at 75% Full (m):**	0.19
Water Depth (m):	0.775	**Time at 75% Full (mins.):**	176.25
Void Ratio:	1.00		
		Depth at 25% Full (m):	0.58
		Time at 25% Full (mins.):	855.00
		V_{p75-25}:	0.43
		a_{p50}:	2.90
		t_{p75-25}:	678.75
		f:	3.67E-06 m/s



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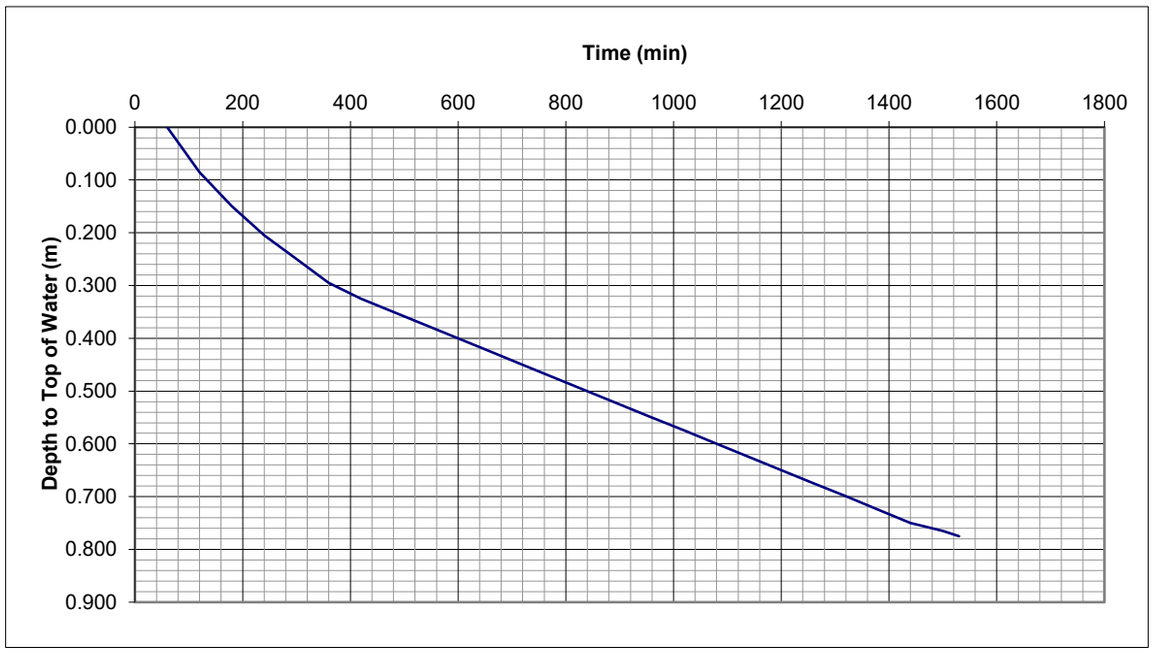
Project No:	**22-199**	Sheet No.	Test 2
Made By:	**R.R**	Revision:	-
Date:	**21/10/2022**	Project:	10 Grinstead Lane

Test 2 of 3

Length (m):	1.60		
Width (m):	0.70	**Depth at 75% Full (m):**	0.19
Water Depth (m):	0.775	**Time at 75% Full (mins.):**	227.73
Void Ratio:	1.00		
		Depth at 25% Full (m):	0.58
		Time at 25% Full (mins.):	1035.00
		V_{p75-25}:	0.43
		a_{p50}:	2.90
		t_{p75-25}:	807.27
		f:	3.09E-06 m/s



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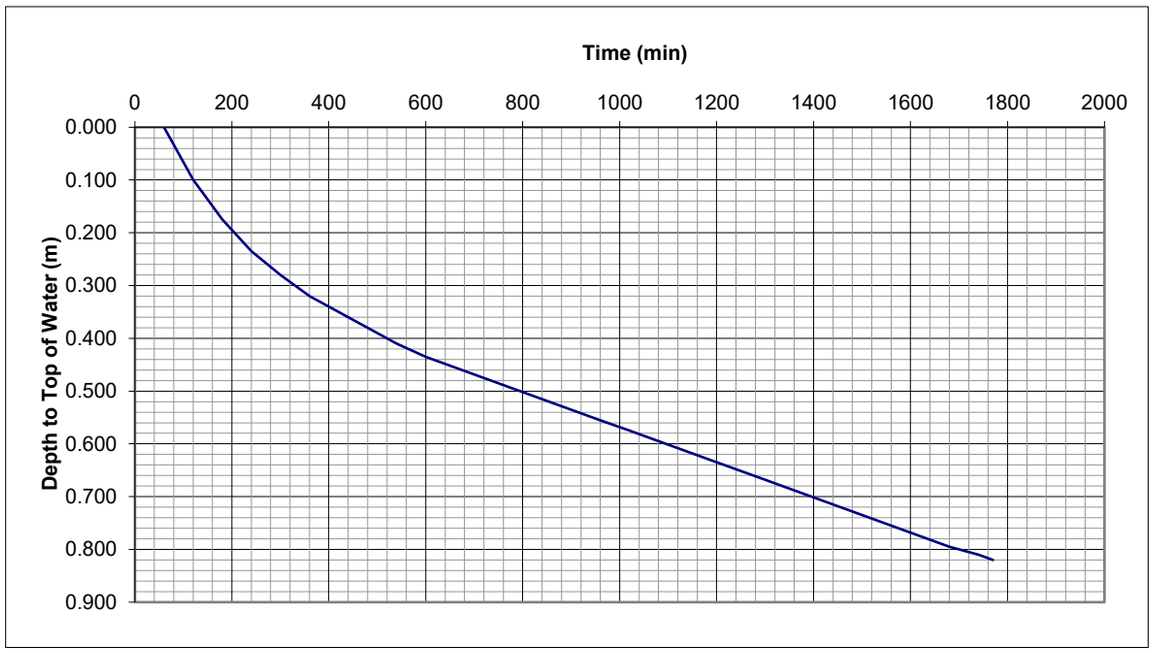
Project No:	**22-199**	Sheet No.	Test 3
Made By:	**R.R**	Revision:	-
Date:	**21/10/2022**	Project:	10 Grinstead Lane

Test 3 of 3

Length (m):	1.60		
Width (m):	0.70	**Depth at 75% Full (m):**	0.21
Water Depth (m):	0.820	**Time at 75% Full (mins.):**	210.00
Void Ratio:	1.00		
		Depth at 25% Full (m):	0.62
		Time at 25% Full (mins.):	1140.00
		V_{p75-25}:	0.46
		a_{p50}:	3.01
		t_{p75-25}:	930.00
		f:	2.74E-06 m/s



TRENCH SOAKAWAY DESIGN TO BRE365

DT09-0915

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Tel: 01732 617555
Email: mail@hodel.uk

Project No: **22-199** Sheet No. SA1

Made By: **RR** Revision: -

Date: **21/10/2022** Project: 10 Grinstead Lane

Trench Soakaway

SA1 Drive

Storm Duration D (mins)	M5 - D 20mmxZ1	Z2	M10 - D =R (mm)	I	O		S Required *L	**Length of Trench (m)**
5	7.13	1.20	8.58	0.3	0.0005	0.0010	0.6	**0.60**
10	10.13	1.22	12.37	0.5	0.0010	0.0020	0.6	**0.86**
15	12.33	1.23	15.16	0.6	0.0015	0.0030	0.6	**1.06**
30	15.73	1.24	19.51	0.8	0.0030	0.0059	0.6	**1.35**
60	20.00	1.24	24.80	1.0	0.0059	0.0118	0.6	**1.69**
120	24.47	1.24	30.34	1.2	0.0118	0.0237	0.6	**2.02**
240	29.93	1.22	36.53	1.5	0.0237	0.0473	0.6	**2.33**
360	33.80	1.21	40.85	1.6	0.0355	0.0710	0.6	**2.49**
600	38.93	1.19	46.46	1.9	0.0592	0.1184	0.6	**2.61**
1440	49.60	1.17	58.07	2.3	0.1420	0.2841	0.6	**2.55**

Country	England / Wales	
Site location r	0.35	
Contributing Area	40	m^2
Effective Depth	1.2	m
Trench Width	0.5	m
Void ratio	0.95	
f	2.74E-06	m/s
Storage Achieved	1.49	m^3
a_{s50}	3.74	

Length of Trench to be: 2.61 m
Depth below invert to be: 1.2 m
Width of Trench to be: 0.5 m

TRENCH SOAKAWAY DESIGN TO BRE365

DT09-0915

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Project No: **22-199** Sheet No. SA2

Made By: **RR** Revision: -

Date: **21/10/2022** Project: 10 Grinstead Lane

Trench Soakaway

SA2 - Roof

Storm Duration D (mins)	M5 - D 20mmxZ1	Z2	M10 - D =R (mm)	I	O		S Required *L	**Length of Trench (m)**
5	7.13	1.20	8.58	0.7	0.0007	0.0013	0.8	**0.93**
10	10.13	1.22	12.37	1.0	0.0013	0.0026	0.8	**1.34**
15	12.33	1.23	15.16	1.3	0.0020	0.0039	0.8	**1.64**
30	15.73	1.24	19.51	1.6	0.0039	0.0079	0.8	**2.10**
60	20.00	1.24	24.80	2.1	0.0079	0.0158	0.8	**2.64**
120	24.47	1.24	30.34	2.5	0.0158	0.0316	0.8	**3.16**
240	29.93	1.22	36.53	3.0	0.0316	0.0631	0.8	**3.64**
360	33.80	1.21	40.85	3.4	0.0473	0.0947	0.8	**3.91**
600	38.93	1.19	46.46	3.9	0.0789	0.1578	0.8	**4.12**
1440	49.60	1.17	58.07	4.8	0.1894	0.3788	0.8	**4.07**

Country	England / Wales	
Site location r	0.35	
Contributing Area	83	m^2
Effective Depth	1.6	m
Trench Width	0.5	m
Void ratio	0.95	
f	2.74E-06	m/s
Storage Achieved	3.13	m^3
a_{s50}	7.38	

Length of Trench to be: 4.12 m
Depth below invert to be: 1.6 m
Width of Trench to be: 0.5 m