

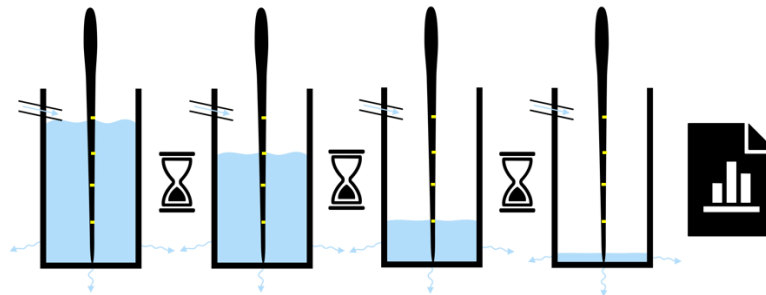


# HydroGround Civils

## BRE365 Soakage Test Report

Location: 19 Feenan Highway, Tilbury  
Client: RS Construction and Property Services Ltd  
Project: Proposed dwelling

Revision: A  
Date: 02 October 2023  
Author: CM  
Reference: RM091701



On behalf of:  
RS Construction and Property Services Ltd

Date of Soakage Test:  
29<sup>th</sup> September 2023

## Contents

1	INTRODUCTION	2
2	PROPOSED DEVELOPMENT AND LOCATION	2
3	GEOLOGY	2
4	OBSERVATION & METHODOLOGY	2
5	RESULTS	3
6	CONCLUSION AND RECOMMENDATIONS	3

## Appendices

Appendix A BRE365 Soakage Test Data and Results

## 1 Introduction

HydroGround Civils (HGC) were commissioned to address planning condition 7(5) - Application Ref: 23/00400/FUL. Part 5 of condition 7 stipulates that "*infiltration tests to be carried out in line with BRE365 for the locations where SuDS are proposed*". HydroGround Civils attended site on Friday 29<sup>th</sup> September 2023 at 08:00 to carry out BRE365 soakage test.

## 2 Proposed Development and Location

The proposal seeks to construct an end of terrace two storey dwelling within the land adjacent to no. 19 Feenan Highway, and alteration to existing vehicle crossover. Surface water drainage proposal submitted to HGC consists of the use of a soakaway in the rear garden.

The site is located on Feenan Highway in Tilbury, Essex. The approximate National Grid Reference is TQ 64652 76497 (564652 Easting, 176497 Northing).

## 3 Geology

British Geological Survey (BGS) mapping describes the superficial geology at this location as "Alluvium - Clay, silt, sand and peat", and bedrock geology as "Lewes Nodular Chalk Formation, Seaford Chalk Formation and Newhaven Chalk Formation - Chalk".

## 4 Observation & Methodology

A trial pit had been excavated at the location of the proposed soakaway as per Drawing No. 3594/D/2 (Rev. P2, 19/09/23) by AS Construction & Structural Engineering. The dimension for this pit was 1.3m long by 0.6m wide and 2.0m deep, this is in accordance with BRE365 guidance.

Excavated soil was of dark colour and clayey appearance. There was standing water at a depth of 1.7m below ground level. It was reported that it had not rained the day before nor in the morning of the site visit; it is likely that this was groundwater seeping into the excavation.

The trial pit was filled with water to the pipe invert level (assumed as 0.65m below ground level) and measurements were taken and recorded.

## 5 Results

Water dropped approximately 70mm in 30 minutes and remained at this depth until 120 minutes. The water level did not fall to 75% of the effective depth, the test was therefore abandoned. Infiltration rate could not be determined as water remained at the same level for 90 minutes.

Soakage test data and results can be found in Appendix A.

## 6 Conclusion and Recommendations

Guidance requires that an unsaturated zone of at least 1m is provided below the base of any proposed infiltration system. One of the reasons is that high groundwater levels might reduce capacity of a system to soak away.

Given the presence of groundwater in the trial pit, infiltration is considered to be unsuitable. Furthermore, the distance of the proposed location of the soakaway to neighbouring land (<5m) and well as poor soakage potential following the soakage test, infiltration is not recommended as a means of surface water disposal and therefore the client should seek alternative ways to dispose of surface water from the proposed development.



# Appendix A

## BRE365 Test Data and Results



**19 FEENAN HIGHWAY, TILBURY, ESSEX - SOAKAGE TEST IN ACCORDANCE WITH BRE365 (FRIDAY 29th SEPTEMBER 2023)**

Time (min)	Depth to WL (m)
0	0.65
10	0.68
20	0.70
30	0.72
40	0.72
50	0.72
60	0.72
70	0.72
80	0.72
90	0.72
100	0.72
110	0.72
120	0.72
130	
140	
150	
160	
170	
180	
190	
200	
210	
220	
230	
240	
250	
260	
270	
280	
290	
300	

BRE365 Pit Dimension	
Length	1300 mm
Width	600 mm
Depth	2000 mm
Depth to GW	1700 mm
Depth to IL	650 mm
Eff Depth	1050 mm
Actual Depth	70 mm

