

Mr Tom Botterill
MyPad 2020 Ltd
The Quadrant
Nuart Road
Beeston
Nottingham
NG9 2NH

Dear Tom,

Re: Barton Road, Barlestone –

Infiltration Testing to Assist with Soakaway Design and/or Permeable Paving.

Background

Erda Associates Ltd. were requested by MyPad 2020 Ltd. (hereafter referred to as the client) to undertake infiltration testing to assist with the design of a proposed permeable driveway for a proposed residential development at the site known as *Barton Road, Barlestone*. The site currently comprises an agricultural field. Site location and boundary plans are included in **Appendix A**.

Site Works

Erda Associates Ltd. (Erda) were asked to attend the subject site on 4th October 2024 to undertake the necessary infiltration testing works for the subject site.

Five soakaway test pits (SA01-05) were excavated in areas specified by the client for potential future soakaway drainage. An exploratory hole location plan is enclosed in **Appendix A**. The excavations were limited to a maximum depth of 0.50m as specified by the client.

Ground Conditions

The investigation has identified that the site is underlain by topsoil, over yellow sandy gravelly clay. The topsoil was generally recorded to extend to depths of between 0.30m and 0.40mbgl. The topsoil was immediately underlain by the clay. The base of the clay was not encountered in any of the exploratory holes. Groundwater was not encountered in any of the trial pits.

Soakaway Testing

Soakaway drainage was noted to be relatively slow. It was not possible to complete full test runs in SA01 and SA02 due to insufficient drainage and time constraints. The results of the soakaway testing are summarised in Table 1.1 below;

Table 1.1 Soakaway Test Results

Pit Reference	Infiltration Rate (m/s)
	Test 1
SA01	N/A
SA02	N/A
SA03	$1.02 \times 10^{-6*}$
SA04	$3.21 \times 10^{-6*}$
SA05	$1.26 \times 10^{-6*}$

* denotes where drainage rate has been extrapolated.

Full soakaway calculations for table 1.1, above, are included in **Appendix B**.

Infiltration within the natural deposits was noted to be slow. Please note that all drainage values were extrapolated and, therefore, are indicative only. Please also note that groundwater levels may be subject to seasonal variation.

We trust the above is sufficient for your requirements. However, should you have any queries, or require any further information, please do not hesitate to contact us.

Yours Sincerely

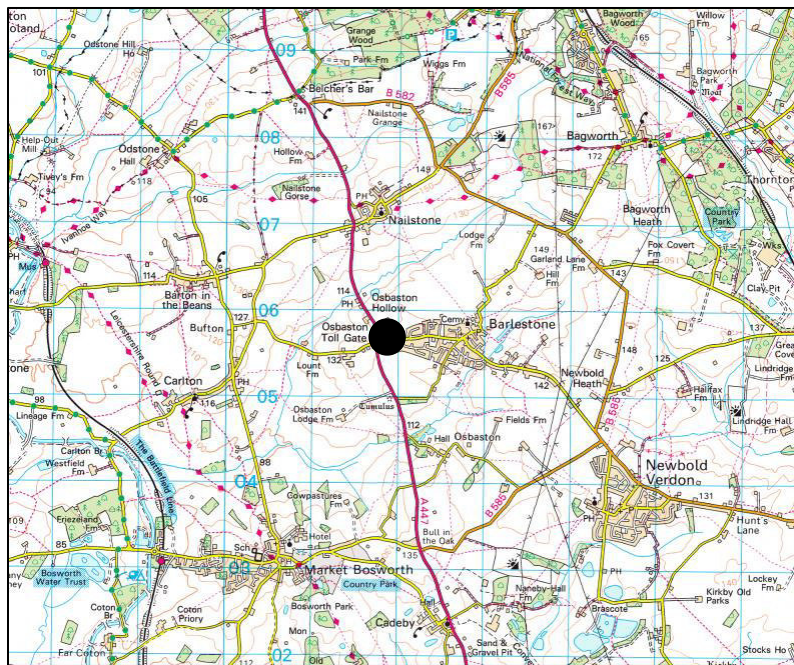
A handwritten signature in black ink, reading 'P. Devitt'.

Phil Devitt, BSc MSc MRICS
Director

Encl.
Appendix A – Site Plans
Appendix B – Soakaway Results

Appendix A





KEY:

● Approximate Site Location

DO NOT SCALE



TITLE:

Site Location Plan

PROJECT:

Barton Road, Barlestone

PROJECT No:

EAL.288.22

DATE:

10/2024

SCALE :

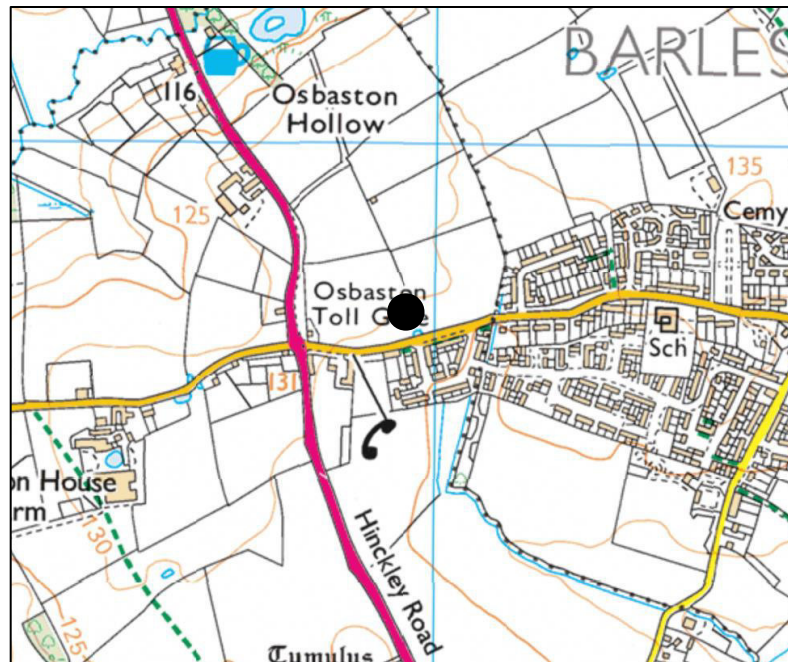
NTS

DRAWN :

PD

DWG No:

Figure 1

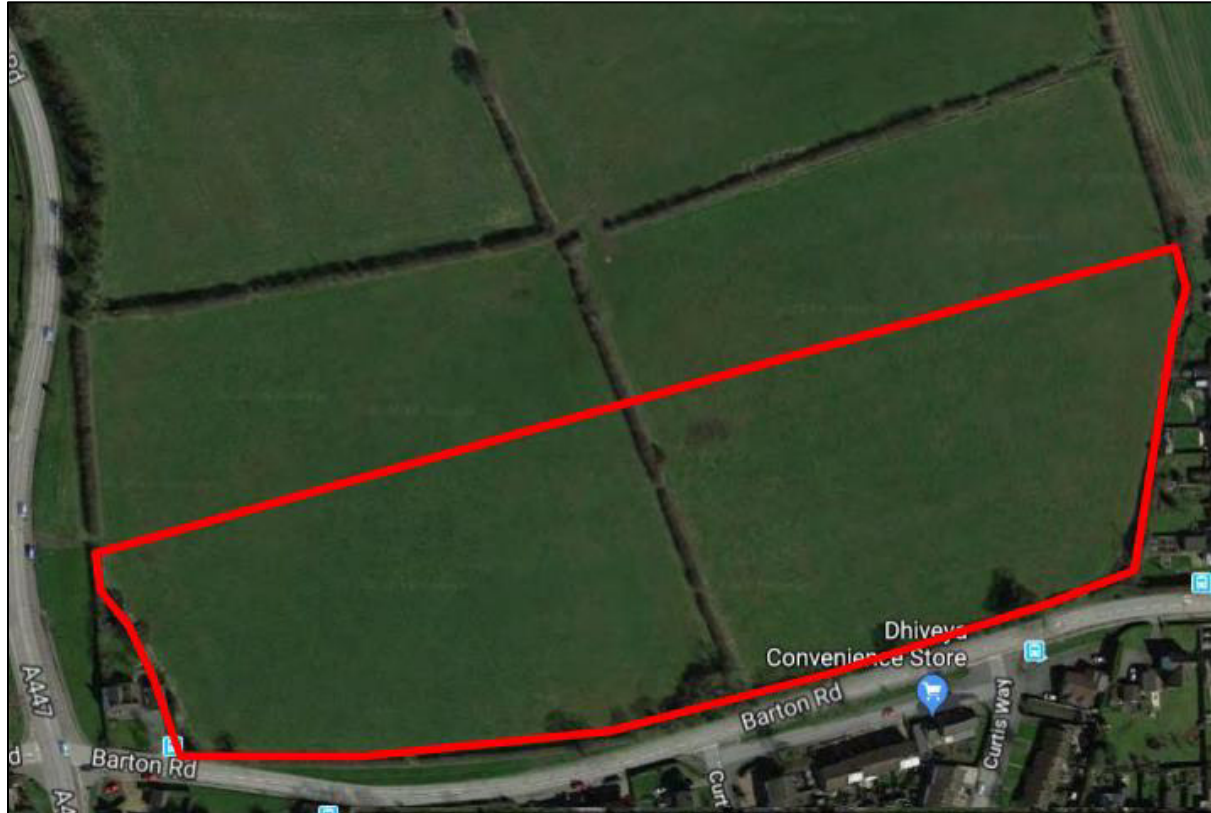




KEY:



Site Boundary



DO NOT SCALE



TITLE:

Site Layout

PROJECT:

Barton Road, Barlestone

PROJECT No:

EAL.288.22

DATE:

10/2024

SCALE :

NTS

DRAWN :

PD

DWG No:

Figure 2

KEY:



DO NOT SCALE



TITLE:

Development Proposal

PROJECT:

Barton Road, Barlestone

PROJECT No:

EAL.288.22

DATE:

10/2024

SCALE :

NTS

DRAWN :

PD

DWG No:

Figure 3

KEY:



Approximate Shallow Soakaway
Test Pit Location



DO NOT SCALE



TITLE:

Exploratory Hole Location Plan

PROJECT:

Barton Road, Barlestone

PROJECT No:

EAL.288.22

DATE:

10/2024

SCALE :

NTS

DRAWN :

PD

DWG No:

Figure 5

Appendix B



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Soil Profile:

Depth (m)		Description
From:	To:	
0.00	0.40	Topsoil.
0.40	0.50	Yellow sandy gravelly clay.

Not to scale

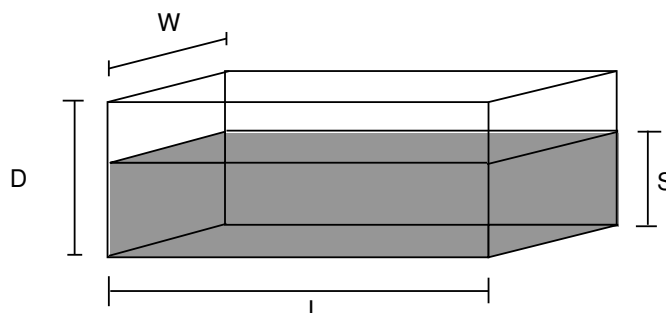
All dimensions in metres.

D = Depth of test pit =

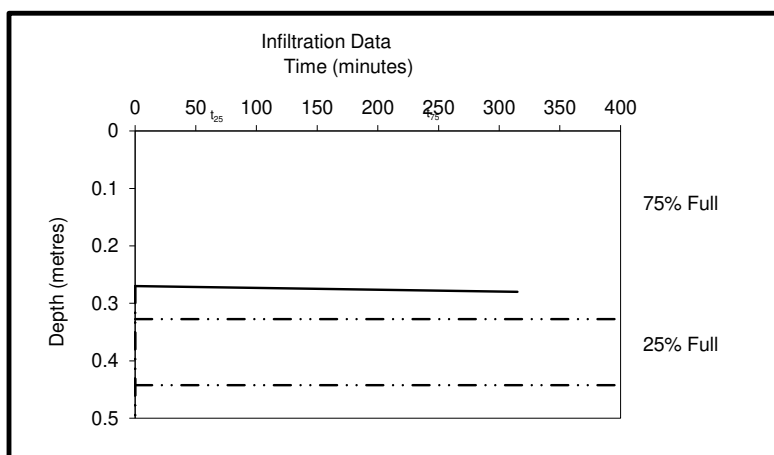
W = Width of test pit =

L = Length of test pit =

S= Storage depth (of water) =



Test Date: 04.10.2024

[illegible]

Notes:

Water did not sufficiently dissipate during test period.

Test and analysis carried out in general accordance with BRE Digest 365 : 2007

Job No.: EAL.288.22
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Client: MyPad 2020 Ltd.



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Soil Profile:

Depth (m)		Description
From:	To:	
0.00	0.40	Topsoil.
0.40	0.50	Yellow sandy gravelly clay.

Not to scale

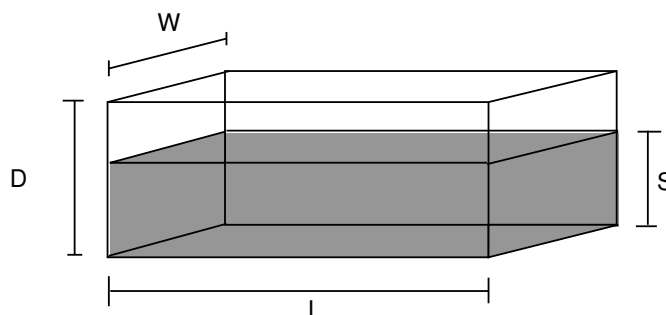
All dimensions in metres.

D = Depth of test pit =

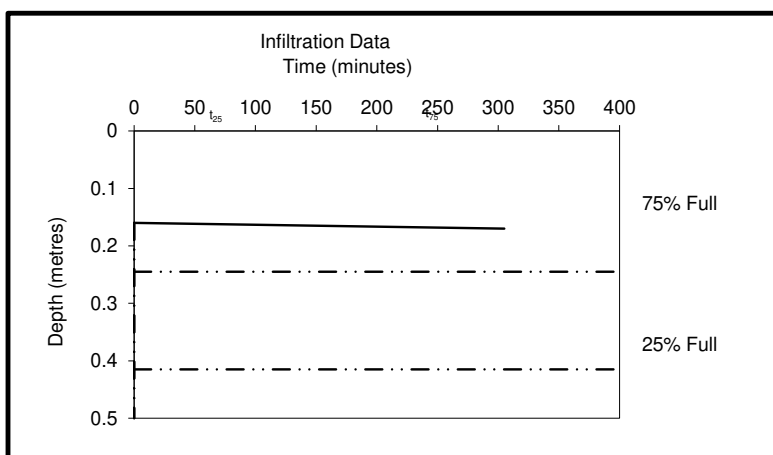
W = Width of test pit =

L = Length of test pit =

S= Storage depth (of water) =



Test Date: 04.10.2024

[illegible]

Notes:

Water did not sufficiently dissipate during test period.

Test and analysis carried out in general accordance with BRE Digest 365 : 2007

Job No.: EAL.288.22
Site: Barton Road, Barlestone
Client: MyPad 2020 Ltd.



Trial pit No.: SA03

Soil Profile:

Depth (m)		Description
From:	To:	
0.00	0.30	Topsoil.
0.30	0.50	Yellow mottled red sandy gravelly clay.

Sketch plan of test zone

Not to scale

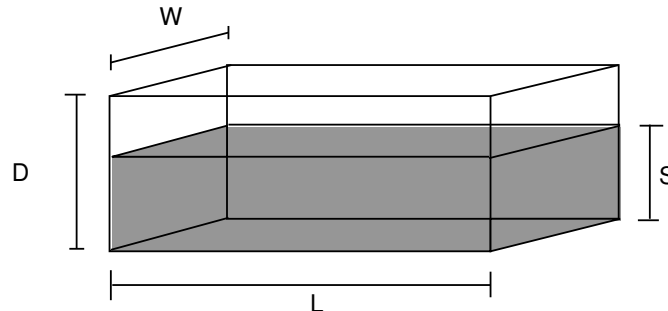
All dimensions in metres.

D = Depth of test pit =

W = Width of test pit =

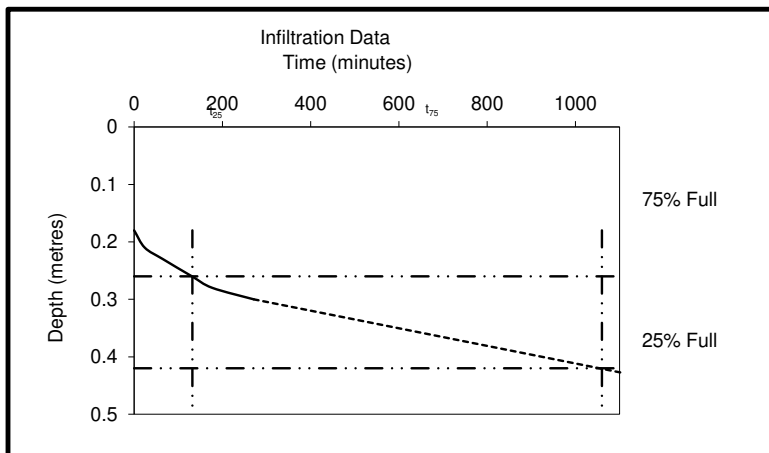
L = Length of test pit =

S= Storage depth (of water) =



Soakaway Test Run 1

Test Date: 04.10.2024

[illegible]

Notes:

Therefore:

S= 0.32 m a_{p50}= 0.28 m² V_{p75-25}= 0.0144 m³

From the above graph,

$$t_{p25}=132 \text{ (min)} \quad t_{p75}=1060 \text{ (min)}$$

$$\frac{\text{Soil infiltration rate, } i}{a_{p50} \times t_{p75-25}} = \frac{v_{p75-25} \times N}{a_{p50} \times t_{p75-25}} = 1.02E-06 \quad \text{or} = 3.68E-03$$

$$f_{run1} = \underline{1.02 \times 10^{-6} \text{ m/s}} \quad \text{or} \quad \underline{3.68 \times 10^{-3} \text{ m/hr}}$$

Test and analysis carried out in general accordance with BRE Digest 365 : 2007

Job No.: EAL.288.22

Site: Barton Road, Barlestone

Client: MyPad 2020 Ltd.

INSITU SOAKAWAY TEST RESULTS

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Trial pit No.: SA04

Soil Profile:

Depth (m)		Description
From:	To:	
0.00	0.30	Topsoil.
0.30	0.50	Yellow mottled red sandy gravelly clay.

Sketch plan of test zone

Not to scale

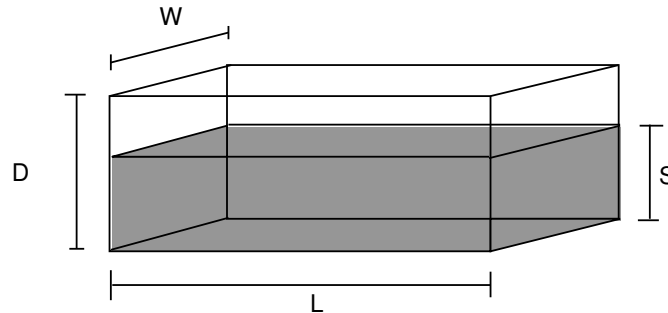
All dimensions in metres.

D = Depth of test pit =

W = Width of test pit =

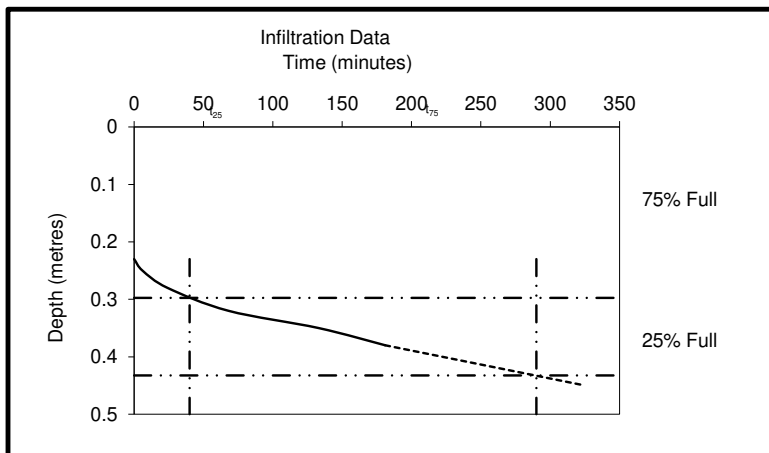
L = Length of test pit =

S = Storage depth (of water) =



Soakaway Test Run 1

Test Date: 04.10.2024



Time (minutes)	Depth (m)
0	0.23
6	0.25
24	0.28
68	0.32
133	0.35
181	0.38

Notes:

Therefore:

$$S = 0.27 \text{ m} \quad a_{p50} = 0.25 \text{ m}^2 \quad V_{p75-25} = 0.0122 \text{ m}^3$$

From the above graph,

$$t_{p25} = 40 \text{ (min)} \quad t_{p75} = 290 \text{ (min)}$$

$$\text{Soil Infiltration Rate, } i = \frac{V_{p75-25} \times N}{a_{p50} \times t_{p75-25}} = 3.21\text{E-}06 \quad t_{\text{run1}} = \frac{3.21 \times 10^{-6}}{1.16 \times 10^{-2}} \text{ m/s}$$
$$\text{or } = 1.16\text{E-}02 \quad \text{or } \underline{1.16 \times 10^{-2}} \text{ m/hr}$$

Test and analysis carried out in general accordance with BRE Digest 365 : 2007

Job No.: EAL.288.22

Site: Barton Road, Barlestone

Client: MyPad 2020 Ltd.



Trial pit No.: SA05

Soil Profile:

Depth (m)		Description
From:	To:	
0.00	0.30	Topsoil.
0.30	0.50	Yellow mottled red sandy gravelly clay.

Sketch plan of test zone

Not to scale

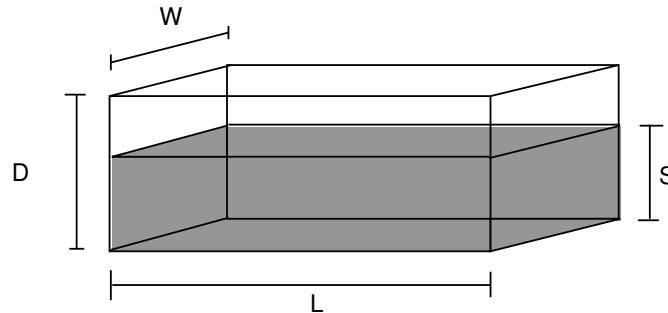
All dimensions in metres.

D = Depth of test pit =

W = Width of test pit =

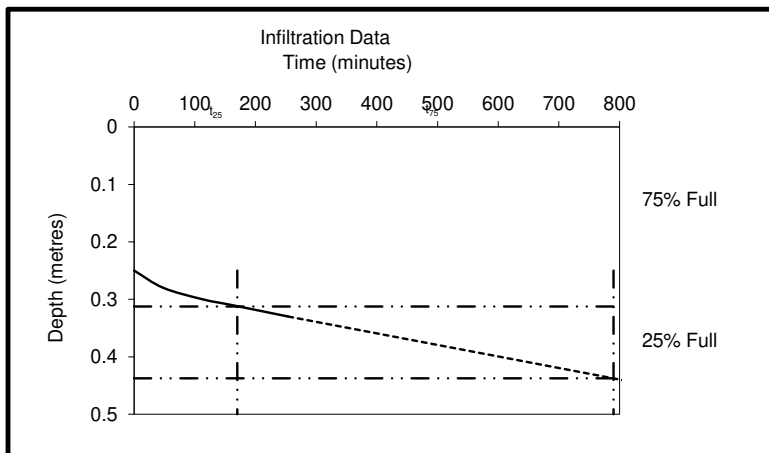
L = Length of test pit =

S= Storage depth (of water) =



Soakaway Test Run 1

Test Date: 04.10.2024

[illegible]

Notes:

Therefore:

S= 0.25 m a_{p50}= 0.24 m² V_{p75-25}= 0.0113 m³

From the above graph,

$$t_{p25}=170 \quad (\text{min}) \quad t_{p75}=790 \quad (\text{min})$$

$$\frac{\text{Soil infiltration rate, } i}{\text{a}_{p50} \times t_{p75-25}} = \frac{V_{p75-25} \times N}{\text{a}_{p50} \times t_{p75-25}} = 1.26\text{E-}06 \quad \tau_{run1} = \underline{1.26 \times 10^{-6} \text{ m/s}}$$

$$\text{or} = 4.54\text{E-}03 \quad \text{or} \underline{4.54 \times 10^{-3} \text{ m/hr}}$$

Test and analysis carried out in general accordance with BRE Digest 365 : 2007

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