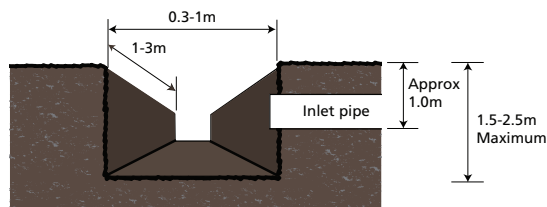


### This Percolation Test follows the procedures laid out by the BRE Digest 365

#### Step 1 - Dig a trial hole

- The base of the trial hole should be approximately the same depth as anticipated in the full size soakaway.
- Overall excavation depth is typically: 1.5m-2.5m for areas <100m².
- The test hole should be typically 0.3m-1m wide and 1m-3m long (make a record of the test hole dimensions).



#### Step 2 - Fill the hole with water

- Fill trial hole with water – this needs to be done rapidly to mimic a real storm event.
- Record the time taken for the water level to fall within the trial hole from 75% to 25% full.
- Repeat 3 times, allowing the trial hole to drain between tests.
- Best practice for soakaways longer than 25m is to perform a second percolation test at a different location to that of the 1st test site.

#### Step 3 - The results

##### Soil Infiltration Rate

$$f = \frac{V_{(p75-25)}}{a_{(p50)} \times t_{(p75-25)}}$$

$V_{(p75-25)}$  = Volume of the hole from 25% to 75% depth

$a_{(p50)}$  = Internal surface area of the hole up to 50% of the depth and including the base area

$t_{(p75-25)}$  = The time for the hole to drain from 75% to 25% full in seconds

- Contact the Polypipe Water Management Solutions Technical Team and advise them of the dimensions of the test hole and lowest timed result (in minutes).
- Polypipe Water Management Solutions will take this data and estimate the soakaway size required.

#### Worked Example

Invert of the discharge drain - 1.0m below the surface.  
When cleaned and trimmed the test hole was 2.51m deep, 2.40m long and 0.60m wide.  
An effective storage depth of 1.5m therefore adopted.

Test hole volume between 75% and 25% effective depth:

$$V_{(p75-25)} = 2.40 \times 0.60 \times (1.125 - 0.375) = 1.08\text{m}^3$$

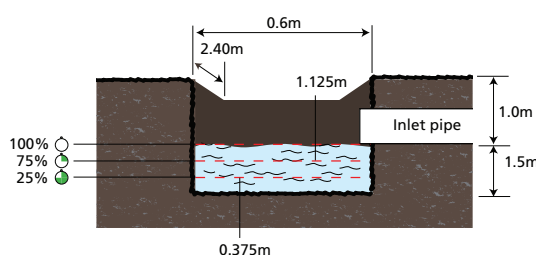
The mean surface area through which outflow occurs, taken to be the hole sides at 50% effective depth, including the base of the pit:

$$a_{(p50)} = 0.75[2(2.40 + 0.6)] + (2.4 \times 0.6) = 0.75(6) + 1.44 = 5.94\text{m}^2$$

The time taken for water to drain from 75% to 25% full:  $t_{(p75-25)} = 102 - 11 = 91$  minutes

Soil Infiltration Rate  $\frac{1.08}{5.94 \times (91 \times 60)} = 3.33 \times 10^{-5} \text{ m/sec}$

$$5.94 \times (91 \times 60)$$



Test hole depth at 75% and 25%

Number of minutes to drain from 75% to 25% depth