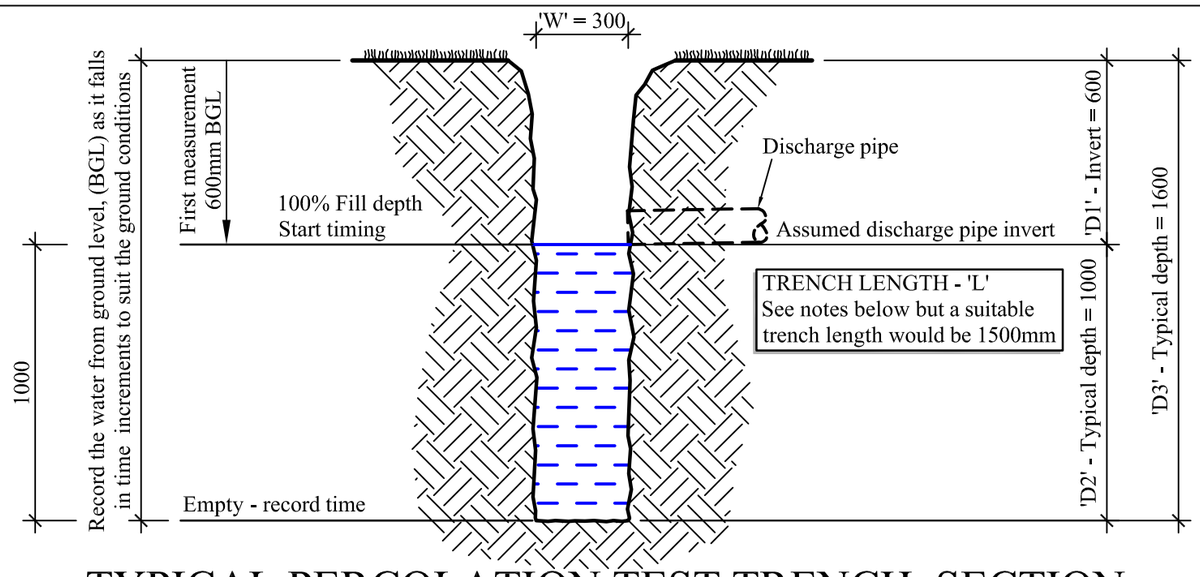

TYPICAL PERCOLATION TEST TRENCH SECTION

To be used for surface water calculations only, NOT septic tank / BioDisc drainage fields

TRENCH

HEALTH AND SAFETY:
Check there are not any electrical cables above or below ground or gas pipes etc. In farm locations check there are not any existing land drainage schemes in place.

Sides of the trench to be vertical and trimmed square, do not enter the trench. The trench should be in the location of the proposed soakaway and if a soakaway with a large plan size is intended then more than one test may be required.

Measure, label and photograph the empty trench and record the ground conditions which will change with depth.

Use a digger bucket with teeth to reduce polishing of the ends and base of the trench.

Soakaways are to be more than 5m from a building or road, a minimum 2.5m from a boundary, (5m preferred) and 50m from a drinking water borehole. Be mindful of tests on the top of banks etc. i.e. in a field near a boundary with a drop down to a road, or behind a retaining wall. If in doubt contact an Engineer. The location of the trenches will need to be marked on a site plan.

WIDTH - 'W'
300mm is used as a standard digger bucket size and kept small to reduce water requirements. For deeper trenches this can be increased to 450 - 600mm to avoid damage to hydraulics on the digger arm.

DEPTHS
'D1' - Unless you know otherwise then a 600mm discharge pipe invert is a good starting point.

'D2' - This important because it is in this zone we will be designing the soakaway. Deeper may be good if the trench can be cleaned square and shallower may be okay if we are going to design a large shallow soakaway. Here 1000mm is used as a good starting point. If the intention was to design a deep square pit then 2000mm would be likely be specified.

'D3' - The resulting trench depth

LENGTH ('L')
This is a balance between being able to dig it with clean square sides and being short enough to reduce the amount of water required for the test. The BRE guide says 1.0m to 3.0m so 1.5m, (1500mm), is a useful length but 2.0m is more likely.

WATER TABLE:
If the water table is high and fills the trench, (or starts to dribble in at the bottom), then stop and contact the drainage Engineer

DISCLAIMER:
Pawsey Design Ltd will not be liable for any loss or injury resulting from the use of this guide when not under the supervision of an agreed representative of Pawsey Design Ltd.

HEALTH AND SAFETY:
Do NOT enter the trench. Check for cables and pipes. Do a risk assessment to prevent collapse of the trench or: people, buildings, machinery etc falling into it.

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THE TESTS:

QUANTITY OF WATER REQUIRED:
Here we will change from millimeters to metres.

TEST AS DRAWN: (1000mm fill depth).

Volume of water required = Width 'W' x Length 'L' x Depth of water 'D2' = 0.3m x 1.5m x1.0m = 0.45 cubic metres

This will be required for each test.

But you actually need more than that because although you will flood the water in as fast as you can, some water will infiltrate and disappear before you reach the required fill level of , in this case 1000mm.

A good way to provide the test water is a farm slurry tanker with a 150mm dia. hose to flood the water in very quickly.

Where this is not possible due to access restraints an alternative could be to use one or more of the 1.0m x 1.0m x 1.0m Intermediate Bulk Containers, (IBC's). Try and get them with a 100mm diameter valve or cap at the base.

DEEPER TEST with 1200mm fill depth and say a 600mm wide bucket:

Volume of water required = Width 'W' x Length 'L' x Depth of water 'D2' = 0.6m x 2.0m x 1.2m = 1.44 cubic metres

FILLING THE TRENCH:
In any case the water must be flooded in quickly, a hose slowly filling the hole is not acceptable.

RECORDING THE DRAIN DOWN:
As the water level falls record the level at pre-considered time increments. Each test pit is different so the time increments are estimated for the first test and adjusted for the second and third tests.

Place a timber batten across the top of the trench and measure down from the ground to the water level. Recording levels as being "Below Ground level" BGL.

When you reach the 100% full mark, (in this case 1000mm depth or 600mm BGL) record the time on the log sheet.

For a fast draining pit the time increments may be: 30 seconds, 1 minute, 1 minute 30 seconds, 2 minutes, 3 minutes, 5 minutes, 10 minutes, etc with the time gap increasing as the level falls because it will probably slow down.

For a slow draining pit the time increments may be: 30 seconds, 1 minute, 2 minutes, 3 minutes, 5 minutes, 10 minutes, 15 minutes, 30minutes, 45 minutes, 60 minutes etc with the time gap increasing as the level falls because it will slow down.

Record the time when the pit is empty or has drained to the silty debris now in the bottom.

If the sides of the pit colapse in during the tests to a significant extent contact the drainage Engineer.

3 TESTS REQUIRED:
We repeat the above two more times, recording the results. This should be done on the same day or at least on consecutive days. Ensure your IBC's are full at the start of each test.

As the tests progress it may become apparent a new trench at a deeper or shallower level may give better results.

THIS IS ONLY A GUIDE:
This guide is a starting point and each site is different. Many factors influence the final soakaway design and they in turn influence variation of the percolation test location and depth etc.

CHECK STILL CURRENT:
The guide is based on the BRE DG365 (Revised 2016), Soakaway design guide. It remains the responsibility of the person carrying out the tests to check it is still current and that this guide is still suitable.

Rev B - Change of address and minor revisions	Rev C - 20/02/23 - Updated

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