Yorkshire Septics Ltd.
Beech Tree Farm, Carr Lane
York, YO61 1EY
Telephone: 01759 380646
Website: yorkshireseptics.co.uk

Norfield House
Bank End Lane
High Hoyland
S75 4BB

Client: Henszel Dessign
Service: Percolation Test
Date of Test: 21/01/2026

Assessor: Calem Devlin

Test Hole	Time 1	Time 2	Time 3	Average VP
Test Hole 1	1560 Seconds	2700 Seconds	3300 Seconds	16.8Vp
Test Hole 2	1800 Seconds	2700 Seconds	3300 Seconds	17.33Vp
Test Hole 3	Failed (halfway after 2 hours)	-	-	-
Test Hole 4	20 seconds	20 seconds	20 Seconds	Too fast (fail)
Total	-	-	-	**17.07Vp**

Results - Waste Water Treatment Plant

$Am^2 = P \times Vp \times 0.20$
$21m^2 (^) = 6 \times 17.07 \times 0.20$

Linear metres required in a 600mm width trench = 34m.

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Percolation Test Procedure

1. **Excavation**: Prepare at least two test holes, each 300mm square and excavated to a depth at least 300mm below the planned invert level of the infiltration pipe. Space the holes along the intended line of the subsurface irrigation system. Record any changes in soil type, measured depth, and the position of the water table, if encountered during digging.
2. **Initial Saturation**: To saturate the surrounding soil, fill each hole with water to a minimum depth of 300mm, allowing the water to fully drain away.
3. **Rapid Drainage Check**: If the water drains away within 10 minutes, refill the hole up to a maximum of 10 times. If water continues to drain away quickly, the ground may be too permeable.
4. **Slow Drainage Check**: If water does not fully drain within 6 hours, the ground is likely unsuitable for drainage field use.
5. **Percolation Rate Measurement**: Refill each hole to a depth of 300mm. Record the time in seconds taken for the water level to drop from 75% full to 25% full (a decrease of 150mm in depth).
6. **Calculation of Percolation Rate**: Divide the measured time in seconds by 150. This will yield the average time in seconds per millimetre drop in water level.
7. **Repetition of Tests**: Conduct at least three tests in each hole.
8. **Average Percolation Value**: Calculate the average value by summing all recorded percolation times and dividing by the total number of values.
9. **Record Results**: Maintain records of these results, as they may be required for reference by both the regulator and property owner.
10. **Variance Check and Additional Tests**: If any test result varies significantly (more than 50% higher or lower than the average), perform additional tests in at least three different locations within the proposed drainage field area.
11. **Acceptable Vp Range**: Drainage field installation is feasible only if average percolation values (Vp) fall between 15 and 100, following confirmation of suitable trial hole characteristics.
12. **Vp Limits for Pollution Prevention**: A minimum Vp of 15 is necessary to prevent rapid groundwater contamination. Values above 100 indicate potential issues with efficient soakage, possibly causing surface wastewater ponding.
13. **Regulatory Consultation**: Should the Vp fall below 15 or exceed 100, consult the regulator to explore alternative waste disposal options.

Trench Area and Length Calculation

Using the Vp, calculate the required drainage trench area and length, which determine the size of the irrigation drain needed. For residential properties, the formula for calculating the necessary drainage field area is as follows:

- **For Septic Tanks**: $A=P\times Vp\times 0.25$
- **For Package Treatment Plants**: $A=P\times Vp\times 0.20$ (20% less due to additional effluent treatment)
  A = Drainage field area in square metres (m^2)
- **P** = Number of residents served by the tank (use maximum occupancy for accuracy)
- **Vp** = Percolation rate

Once you calculate A, convert it to trench length based on trench width (usually 0.3m to 0.9m). The trench layout should form continuous loops, determined by the soil's permeability and land availability.

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Floor Area to Linear Trench Length Conversion Table

Drainage Field Area (m^2)	Linear Trench Length for 0.3m Width (m)	Linear Trench Length for 0.6m Width (m)	Linear Trench Length for 0.9m Width (m)
20	66	33	22
30	100	50	33
40	133	67	44
50	167	83	56
60	200	100	66
70	233	117	78
80	266	134	88
90	300	150	100