

PROJECT:	Newsome Avenue, Wombwell	Job No. 39501	Date 29.01.16
SUBJECT:	Infiltration Test Results and Calculation of Infiltration Rates	Prepared MDY	Checked AJK

Test No. SA1

Soil Infiltration Rate in Accordance with BR365

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

Where:

- V_{p75-25} is the effective storage volume of water in the trial pit between 75% and 25% effective depth;
- a_{p50} is the internal surface area of the trial pit up to 50% effective depth and including the base area
- t_{p75-25} is the time for the water level to fall from 75% to 25% effective depth

Initial parameters

Depth to water = **1280** mm Average water depth: **470** mm
 Start time = **0** min Change in water depth: **100** mm

Final parameters

Depth to water = **1380** mm Time interval: **277** min
 End time = **277** min

Effective Storage Volume of Water in the Trial Pit = **0.8788** m³
 75% Effective Depth = **1410** mm from ground level
 25% Effective Depth = **1670** mm from ground level
 Time at 75% Effective Depth = **N/A** minutes
 Time at 25% Effective Depth = **N/A** minutes

V_{p75-25} = **0.44** m³
 a_{p50} = **3.38** m²
 t_{p75-25} = **0** sec
 f = **#DIV/0! m/sec**

Average Soakaway Rate = **1.0E-05** m³/sec
 Average soakaway area = **4.75** m² (sides + base)

BR365 Soil Infiltration Rate = N/A m/sec
Average Infiltration Rate = 2.1E-06 m/sec

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Test No. SA2T1

Soil Infiltration Rate in Accordance with BR365

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

- Where:
- V_{p75-25} is the effective storage volume of water in the trial pit between 75% and 25% effective depth;
 - a_{p50} is the internal surface area of the trial pit up to 50% effective depth and including the base area
 - t_{p75-25} is the time for the water level to fall from 75% to 25% effective depth

Initial parameters

Depth to water = **1470** mm Average water depth: **290** mm
 Start time = **0** min Change in water depth: **480** mm

Final parameters

Depth to water = **1950** mm Time interval: **5** min
 End time = **5** min

Effective Storage Volume of Water in the Trial Pit = **0.8957** m³
 75% Effective Depth = **1603** mm from ground level
 25% Effective Depth = **1868** mm from ground level
 Time at 75% Effective Depth = **1** minutes
 Time at 25% Effective Depth = **3.5** minutes

V_{p75-25} = **0.45** m³
 a_{p50} = **3.41** m²
 t_{p75-25} = **174** sec
 f = **7.5E-04** m/sec

Average Soakaway Rate = **2.7E-03** m³/sec
 Average soakaway area = **3.58** m² (sides + base)

BR365 Soil Infiltration Rate = **7.5E-04** m/sec
Average Infiltration Rate = **7.6E-04** m/sec

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Test No. SA2T2

Soil Infiltration Rate in Accordance with BR365

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

- Where:
- V_{p75-25} is the effective storage volume of water in the trial pit between 75% and 25% effective depth;
 - a_{p50} is the internal surface area of the trial pit up to 50% effective depth and including the base area
 - t_{p75-25} is the time for the water level to fall from 75% to 25% effective depth

Initial parameters

Depth to water = **1420** mm Average water depth: **295** mm
 Start time = **0** min Change in water depth: **470** mm

Final parameters

Depth to water = **1890** mm Time interval: **5** min
 End time = **5** min

Effective Storage Volume of Water in the Trial Pit = **0.8957** m³
 75% Effective Depth = **1553** mm from ground level
 25% Effective Depth = **1818** mm from ground level
 Time at 75% Effective Depth = **1** minutes
 Time at 25% Effective Depth = **3** minutes

V_{p75-25} = **0.45** m³
 a_{p50} = **3.41** m²
 t_{p75-25} = **120** sec
 f = **1.1E-03** m/sec

Average Soakaway Rate = **2.6E-03** m³/sec
 Average soakaway area = **3.61** m² (sides + base)

BR365 Soil Infiltration Rate = **1.1E-03** m/sec
Average Infiltration Rate = **7.3E-04** m/sec

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Test No. SA2T3

Soil Infiltration Rate in Accordance with BR365

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

- Where:
- V_{p75-25} is the effective storage volume of water in the trial pit between 75% and 25% effective depth;
 - a_{p50} is the internal surface area of the trial pit up to 50% effective depth and including the base area
 - t_{p75-25} is the time for the water level to fall from 75% to 25% effective depth

Initial parameters

Depth to water = **1190** mm Average water depth: **385** mm
 Start time = **0** min Change in water depth: **630** mm

Final parameters

Depth to water = **1820** mm Time interval: **7** min
 End time = **7** min

Effective Storage Volume of Water in the Trial Pit = **1.183** m³
 75% Effective Depth = **1365** mm from ground level
 25% Effective Depth = **1715** mm from ground level
 Time at 75% Effective Depth = **1** minutes
 Time at 25% Effective Depth = **4** minutes

V_{p75-25} = **0.59** m³
 a_{p50} = **3.97** m²
 t_{p75-25} = **204** sec
 f = **7.3E-04** m/sec

Average Soakaway Rate = **2.5E-03** m³/sec
 Average soakaway area = **4.19** m² (sides + base)

BR365 Soil Infiltration Rate = **7.3E-04** m/sec
Average Infiltration Rate = **6.0E-04** m/sec

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Test No. SA3T1

Soil Infiltration Rate in Accordance with BR365

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

Where: V_{p75-25} is the effective storage volume of water in the trial pit between 75% and 25% effective depth;

a_{p50} is the internal surface area of the trial pit up to 50% effective depth and including the base area

t_{p75-25} is the time for the water level to fall from 75% to 25% effective depth

Initial parameters

Depth to water = **1730** mm Average water depth: **335** mm
 Start time = **0** min Change in water depth: **470** mm

Final parameters

Depth to water = **2200** mm Time interval: **125** min
 End time = **125** min

Effective Storage Volume of Water in the Trial Pit = **1.0374** m³
 75% Effective Depth = **1873** mm from ground level
 25% Effective Depth = **2158** mm from ground level
 Time at 75% Effective Depth = **1** minutes
 Time at 25% Effective Depth = **30** minutes

V_{p75-25} = **0.52** m³
 a_{p50} = **3.70** m²
 t_{p75-25} = **1716** sec
 f = **8.2E-05** m/sec

Average Soakaway Rate = **1.1E-04** m³/sec
 Average soakaway area = **4.03** m² (sides + base)

BR365 Soil Infiltration Rate = **8.2E-05** m/sec
Average Infiltration Rate = **2.8E-05** m/sec

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Test No. SA3T2

Soil Infiltration Rate in Accordance with BR365

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

Where: V_{p75-25} is the effective storage volume of water in the trial pit between 75% and 25% effective depth;
 a_{p50} is the internal surface area of the trial pit up to 50% effective depth and including the base area
 t_{p75-25} is the time for the water level to fall from 75% to 25% effective depth

Initial parameters

Depth to water = **1530** mm Average water depth: **430** mm
 Start time = **0** min Change in water depth: **680** mm

Final parameters

Depth to water = **2210** mm Time interval: **86** min
 End time = **86** min

Effective Storage Volume of Water in the Trial Pit = **1.4014** m³
 75% Effective Depth = **1723** mm from ground level
 25% Effective Depth = **2108** mm from ground level
 Time at 75% Effective Depth = **2** minutes
 Time at 25% Effective Depth = **32** minutes

V_{p75-25} = **0.70** m³
 a_{p50} = **4.36** m²
 t_{p75-25} = **1830** sec
 f = **8.8E-05** m/sec

Average Soakaway Rate = **2.4E-04** m³/sec
 Average soakaway area = **4.66** m² (sides + base)

BR365 Soil Infiltration Rate = 8.8E-05 m/sec
Average Infiltration Rate = 5.1E-05 m/sec

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Test No. SA3T3

Soil Infiltration Rate in Accordance with BR365

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

Where: V_{p75-25} is the effective storage volume of water in the trial pit between 75% and 25% effective depth;

a_{p50} is the internal surface area of the trial pit up to 50% effective depth and including the base area

t_{p75-25} is the time for the water level to fall from 75% to 25% effective depth

Initial parameters

Depth to water = **1500** mm Average water depth: **450** mm
 Start time = **0** min Change in water depth: **700** mm

Final parameters

Depth to water = **2200** mm Time interval: **109** min
 End time = **109** min

Effective Storage Volume of Water in the Trial Pit = **1.456** m³
 75% Effective Depth = **1700** mm from ground level
 25% Effective Depth = **2100** mm from ground level
 Time at 75% Effective Depth = **3** minutes
 Time at 25% Effective Depth = **34** minutes

V_{p75-25} = **0.73** m³
 a_{p50} = **4.46** m²
 t_{p75-25} = **1890** sec
 f = **8.6E-05** m/sec

Average Soakaway Rate = **1.9E-04** m³/sec
 Average soakaway area = **4.79** m² (sides + base)

BR365 Soil Infiltration Rate = 8.6E-05 m/sec
Average Infiltration Rate = 4.1E-05 m/sec

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Test No. SA4

Soil Infiltration Rate in Accordance with BR365

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

Where: V_{p75-25} is the effective storage volume of water in the trial pit between 75% and 25% effective depth;

a_{p50} is the internal surface area of the trial pit up to 50% effective depth and including the base area

t_{p75-25} is the time for the water level to fall from 75% to 25% effective depth

Initial parameters

Depth to water = **1300** mm Average water depth: **350** mm
 Start time = **0** min Change in water depth: **400** mm

Final parameters

Depth to water = **1700** mm Time interval: **296** min
 End time = **296** min

Effective Storage Volume of Water in the Trial Pit = **1.078** m³
 75% Effective Depth = **1438** mm from ground level
 25% Effective Depth = **1713** mm from ground level
 Time at 75% Effective Depth = **10** minutes
 Time at 25% Effective Depth = **300** minutes

V_{p75-25} = **0.54** m³
 a_{p50} = **3.89** m²
 t_{p75-25} = **17412** sec
 f = **8.0E-06** m/sec

Average Soakaway Rate = **4.4E-05** m³/sec
 Average soakaway area = **4.41** m² (sides + base)

BR365 Soil Infiltration Rate = **8.0E-06** m/sec
Average Infiltration Rate = **1.0E-05** m/sec