

Sump and Sewage Pump Manufacturers Association



PUMP SELECTION FOR ENHANCED FLOW STEP SYSTEMS

WORKSHEET 1 for "Effluent Pumps for Onsite Wastewater Treatment: *Selecting the Right Pump for the Job*"

A. Pump Capacity

Minimum flow rates to maintain a velocity of 2 fps:

Pipe Size	Minimum GPM
1 1/2"	12
2"	21
2 1/2"	30
3"	46

Pipe Size _____ Minimum Pump Capacity GPM

B. Total Dynamic Head

1. Static Head..... _____ ft.

2. Friction Head

a. Discharge pipe length..... _____ ft.

b. Friction factors of fittings and valves (Table A)

Fitting	Size	Qty	X Equivalent Length	= Total
90's				
45's				
Tees				
Check Valve				
Gate Valve				
Union				

Total Equivalent Length _____ ft.

(Pipe lgth _____' + Equivalent lgth _____') / 100 = _____ 100-ft. increments

c. Friction Head per 100' of _____" pipe at _____ GPM (Table B) = _____ ft.

x _____ 100-ft. increments = Friction Head _____ ft.

3. Static Head _____ ft. + Friction Head _____ ft. =... Total Dynamic Head ft.

C. Pump Control Differential

1. Volume of system piping:

Size	GPF	Field Length	Field Volume	Disch Length	Disch Volume

Drainfield Gallons _____ Discharge Gallons _____

2. (Drainfield Volume _____ x _____%) + Discharge Volume _____ =

Volume per Cycle _____ Gallons

3. Pump chamber volume _____ gal / depth _____" = _____ Gallons per inch

4. Gallons per cycle _____ / Gallons per inch _____ = inches per Cycle

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Sump and Sewage Pump Manufacturers Association



PUMP SELECTION FOR LOW PRESSURE PIPE SYSTEMS

WORKSHEET 2 for "Effluent Pumps for Onsite Wastewater Treatment: *Selecting the Right Pump for the Job*"

Pump Capacity

Distribution hole size _____" System Operating Head _____ ft.
 Flow per hole (Table C) _____ GPM x number of holes _____ = GPM

A. Total Dynamic Head

1. Static Head..... _____ ft.
2. System Operating Head..... _____ ft.
3. Friction Head
 - a. Minimum flow rates to maintain a velocity of 2 fps:

Pipe Size	Minimum GPM
1 1/2"	12
2"	21
2 1/2"	30
3"	46

Discharge Pipe Size _____".

- b. Discharge pipe length..... _____ ft.
- c. Friction factors of fittings and valves (Table A)

Fitting	Size	Qty	X Equivalent Length	= Total
90's				
45's				
Tees				
Check Valve				
Gate Valve				

Total Equivalent Length _____ ft.

(Pipe lgth _____' + Equivalent lgth _____') / 100 = _____ 100-ft. increments

- d. Friction Head per 100' of _____" pipe at _____ GPM (Table B) = _____ ft.
 x _____ 100-ft. increments =..... Friction Head _____ ft.

4. Static Head _____ ft. + System Operating Head _____ ft. + Friction Head _____ ft.
 = Total Dynamic Head ft.

B. Pump Control Differential

1. Volume of system piping:

Size	GPF	Field Length	Field Volume	Disch Length	Disch Volume

Drainfield Gallons _____ Discharge Gallons _____.

2. (Lateral line Volume _____ x _____) + Discharge Volume _____ =
 Volume per Cycle _____ Gallons
3. Pump chamber volume _____ gal / depth _____" = _____ Gallons per inch
4. Gallons per cycle _____ / Gallons per inch _____ = inches per Cycle