



**ETC SLOW SOILS PASK CONSTANT
HEAD WELL PERMEAMETER
SINGLE PONDED HEIGHT METHOD**

*Most structured soils from clays through loams;
Also includes unstructured medium and fine sands.
The first choice for most soils.*

d – well hole diameter (cm)	8.3	α* - sat/unsat flow ratio (cm-1)	0.12
H – height of water in well (cm)	15.0	C – shape factor	1.36

R(cm/min)	Kfs (m/sec)
0.01	1.4E-08
0.02	2.7E-08
0.03	4.1E-08
0.04	5.5E-08
0.05	6.9E-08
0.06	8.2E-08
0.07	9.6E-08
0.08	1.1E-07
0.09	1.2E-07
0.10	1.4E-07
0.15	2.1E-07
0.20	2.7E-07
0.25	3.4E-07
0.30	4.1E-07
0.35	4.8E-07
0.40	5.5E-07
0.45	6.2E-07
0.50	6.9E-07
0.55	7.5E-07
0.60	8.2E-07
0.65	8.9E-07
0.70	9.6E-07
0.75	1.0E-06
0.80	1.1E-06
0.85	1.2E-06
0.90	1.2E-06
0.95	1.3E-06
1.0	1.4E-06
1.1	1.5E-06
1.2	1.6E-06
1.3	1.8E-06
1.4	1.9E-06
1.5	2.1E-06
1.6	2.2E-06
1.7	2.3E-06
1.8	2.5E-06
1.9	2.6E-06
2.0	2.7E-06
2.1	2.9E-06
2.2	3.0E-06
2.3	3.2E-06
2.4	3.3E-06
2.5	3.4E-06
2.6	3.6E-06

R(cm/min)	Kfs (m/sec)
2.7	3.7E-06
2.8	3.8E-06
2.9	4.0E-06
3.0	4.1E-06
3.1	4.3E-06
3.2	4.4E-06
3.3	4.5E-06
3.4	4.7E-06
3.5	4.8E-06
3.6	4.9E-06
3.7	5.1E-06
3.8	5.2E-06
3.9	5.4E-06
4.0	5.5E-06
4.1	5.6E-06
4.2	5.8E-06
4.3	5.9E-06
4.4	6.0E-06
4.5	6.2E-06
4.6	6.3E-06
4.7	6.5E-06
4.8	6.6E-06
4.9	6.7E-06
5.0	6.9E-06
5.5	7.5E-06
6.0	8.2E-06
6.5	8.9E-06
7.0	9.6E-06
7.5	1.0E-05
8.0	1.1E-05
8.5	1.2E-05
9.0	1.2E-05
9.5	1.3E-05
10.0	1.4E-05
11.0	1.5E-05
12.0	1.6E-05
13.0	1.8E-05
14.0	1.9E-05
15.0	2.1E-05
16.0	2.2E-05
17.0	2.3E-05
18.0	2.5E-05
19.0	2.6E-05
20.0	2.7E-05

R(cm/min)	Kfs (m/sec)
21.0	2.9E-05
22.0	3.0E-05
23.0	3.2E-05
24.0	3.3E-05
25.0	3.4E-05
26.0	3.6E-05
27.0	3.7E-05
28.0	3.8E-05
29.0	4.0E-05
30.0	4.1E-05
31.0	4.3E-05
32.0	4.4E-05
33.0	4.5E-05
34.0	4.7E-05
35.0	4.8E-05
36.0	4.9E-05
37.0	5.1E-05
38.0	5.2E-05
39.0	5.4E-05
40.0	5.5E-05
41.0	5.6E-05
42.0	5.8E-05
43.0	5.9E-05
44.0	6.0E-05
45.0	6.2E-05
46.0	6.3E-05
47.0	6.5E-05
48.0	6.6E-05
49.0	6.7E-05
50.0	6.9E-05
52.0	7.1E-05
54.0	7.4E-05
56.0	7.7E-05
58.0	8.0E-05
60.0	8.2E-05
62.0	8.5E-05
64.0	8.8E-05
66.0	9.1E-05
68.0	9.3E-05
70.0	9.6E-05
72.0	9.9E-05
74.0	1.0E-04
76.0	1.0E-04
78.0	1.1E-04

R – quasi steady-state rate of fall

Kfs – field saturated hydraulic conductivity

Caution: These tables were generated based on the dimensions and characteristics of the ETC Slow Soils Pask Permeameter Kit only. They should not be used with other constant head permeameters or when the well hole diameter is significantly different than indicated above. Calculate Kfs from first principles instead.



ETC SLOW SOILS PASK CONSTANT HEAD WELL PERMEAMETER SINGLE PONDED HEIGHT METHOD

Porous materials that are both fine textured and massive; including unstructured clayey and silty soils, as well as fine structureless sandy materials.

d – well hole diameter (cm)	8.3	α^* - sat/unsat flow ratio (cm-1)	0.04
H – height of water in well (cm)	15.0	C – shape factor	1.35

R(cm/min)	Kfs (m/sec)
0.001	8.1E-10
0.002	1.6E-09
0.003	2.4E-09
0.004	3.2E-09
0.005	4.0E-09
0.006	4.9E-09
0.007	5.7E-09
0.008	6.5E-09
0.009	7.3E-09
0.010	8.1E-09
0.015	1.2E-08
0.020	1.6E-08
0.025	2.0E-08
0.030	2.4E-08
0.035	2.8E-08
0.040	3.2E-08
0.045	3.6E-08
0.050	4.0E-08
0.055	4.5E-08
0.060	4.9E-08
0.065	5.3E-08
0.070	5.7E-08
0.075	6.1E-08
0.080	6.5E-08
0.085	6.9E-08
0.090	7.3E-08
0.095	7.7E-08
0.10	8.1E-08
0.15	1.2E-07
0.20	1.6E-07
0.25	2.0E-07
0.30	2.4E-07
0.35	2.8E-07
0.40	3.2E-07
0.45	3.6E-07
0.50	4.0E-07
0.55	4.5E-07
0.60	4.9E-07
0.65	5.3E-07
0.70	5.7E-07
0.75	6.1E-07
0.80	6.5E-07
0.85	6.9E-07
0.90	7.3E-07

R(cm/min)	Kfs (m/sec)
0.95	7.7E-07
1.00	8.1E-07
1.10	8.9E-07
1.20	9.7E-07
1.30	1.1E-06
1.40	1.1E-06
1.50	1.2E-06
1.60	1.3E-06
1.70	1.4E-06
1.80	1.5E-06
1.90	1.5E-06
2.00	1.6E-06
2.10	1.7E-06
2.20	1.8E-06
2.30	1.9E-06
2.40	1.9E-06
2.50	2.0E-06
2.60	2.1E-06
2.70	2.2E-06
2.80	2.3E-06
2.90	2.3E-06
3.00	2.4E-06
3.10	2.5E-06
3.20	2.6E-06
3.30	2.7E-06
3.40	2.8E-06
3.50	2.8E-06
3.60	2.9E-06
3.70	3.0E-06
3.80	3.1E-06
3.90	3.2E-06
4.00	3.2E-06
4.10	3.3E-06
4.20	3.4E-06
4.30	3.5E-06
4.40	3.6E-06
4.50	3.6E-06
4.60	3.7E-06
4.70	3.8E-06
4.80	3.9E-06
4.90	4.0E-06
5.00	4.0E-06
5.10	4.1E-06
5.20	4.2E-06

R(cm/min)	Kfs (m/sec)
5.30	4.3E-06
5.40	4.4E-06
5.50	4.5E-06
5.60	4.5E-06
5.70	4.6E-06
5.80	4.7E-06
5.90	4.8E-06
6.00	4.9E-06
6.10	4.9E-06
6.20	5.0E-06
6.30	5.1E-06
6.40	5.2E-06
6.50	5.3E-06
6.60	5.3E-06
6.70	5.4E-06
6.80	5.5E-06
6.90	5.6E-06
7.00	5.7E-06
7.50	6.1E-06
8.00	6.5E-06
8.50	6.9E-06
9.00	7.3E-06
9.50	7.7E-06
10.0	8.1E-06
11.0	8.9E-06
12.0	9.7E-06
13.0	1.1E-05
14.0	1.1E-05
15.0	1.2E-05
16.0	1.3E-05
17.0	1.4E-05
18.0	1.5E-05
19.0	1.5E-05
20.0	1.6E-05
25.0	2.0E-05
30.0	2.4E-05
35.0	2.8E-05
40.0	3.2E-05
45.0	3.6E-05
50.0	4.0E-05
55.0	4.5E-05
60.0	4.9E-05
65.0	5.3E-05
70.0	5.7E-05

R – quasi steady-state rate of fall

Kfs – field saturated hydraulic conductivity

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*Compacted, structureless, clayey materials
such as landfill caps and liners, lacustrine or
marine sediments.*

d – well hole diameter (cm)	8.3	α^* - sat/unsat flow ratio (cm-1)	0.01
H – height of water in well (cm)	15.0	C – shape factor	1.27

R(cm/min)	Kfs (m/sec)
0.001	2.7E-10
0.002	5.4E-10
0.003	8.1E-10
0.004	1.1E-09
0.005	1.3E-09
0.006	1.6E-09
0.007	1.9E-09
0.008	2.1E-09
0.009	2.4E-09
0.010	2.7E-09
0.015	4.0E-09
0.020	5.4E-09
0.025	6.7E-09
0.030	8.1E-09
0.035	9.4E-09
0.040	1.1E-08
0.045	1.2E-08
0.050	1.3E-08
0.055	1.5E-08
0.060	1.6E-08
0.065	1.7E-08
0.070	1.9E-08
0.075	2.0E-08
0.080	2.1E-08
0.085	2.3E-08
0.090	2.4E-08
0.095	2.6E-08
0.10	2.7E-08
0.15	4.0E-08
0.20	5.4E-08
0.25	6.7E-08
0.30	8.1E-08
0.35	9.4E-08
0.40	1.1E-07
0.45	1.2E-07
0.50	1.3E-07
0.55	1.5E-07
0.60	1.6E-07
0.65	1.7E-07
0.70	1.9E-07
0.75	2.0E-07
0.80	2.1E-07
0.85	2.3E-07
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0.95	2.6E-07
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1.50	4.0E-07
1.60	4.3E-07
1.70	4.6E-07
1.80	4.8E-07
1.90	5.1E-07
2.00	5.4E-07
2.10	5.6E-07
2.20	5.9E-07
2.30	6.2E-07
2.40	6.4E-07
2.50	6.7E-07
2.60	7.0E-07
2.70	7.3E-07
2.80	7.5E-07
2.90	7.8E-07
3.00	8.1E-07
3.10	8.3E-07
3.20	8.6E-07
3.30	8.9E-07
3.40	9.1E-07
3.50	9.4E-07
3.60	9.7E-07
3.70	9.9E-07
3.80	1.0E-06
3.90	1.0E-06
4.00	1.1E-06
4.10	1.1E-06
4.20	1.1E-06
4.30	1.2E-06
4.40	1.2E-06
4.50	1.2E-06
4.60	1.2E-06
4.70	1.3E-06
4.80	1.3E-06
4.90	1.3E-06
5.00	1.3E-06
5.10	1.4E-06
5.20	1.4E-06

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5.30	1.4E-06
5.40	1.5E-06
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5.60	1.5E-06
5.70	1.5E-06
5.80	1.6E-06
5.90	1.6E-06
6.00	1.6E-06
6.10	1.6E-06
6.20	1.7E-06
6.30	1.7E-06
6.40	1.7E-06
6.50	1.7E-06
6.60	1.8E-06
6.70	1.8E-06
6.80	1.8E-06
6.90	1.9E-06
7.00	1.9E-06
7.50	2.0E-06
8.00	2.1E-06
8.50	2.3E-06
9.00	2.4E-06
9.50	2.6E-06
10.0	2.7E-06
11.0	3.0E-06
12.0	3.2E-06
13.0	3.5E-06
14.0	3.8E-06
15.0	4.0E-06
16.0	4.3E-06
17.0	4.6E-06
18.0	4.8E-06
19.0	5.1E-06
20.0	5.4E-06
25.0	6.7E-06
30.0	8.1E-06
35.0	9.4E-06
40.0	1.1E-05
45.0	1.2E-05
50.0	1.3E-05
55.0	1.5E-05
60.0	1.6E-05
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