



**ETC STANDARD PASK CONSTANT
HEAD WELL PERMEAMETER
SINGLE PONDED HEIGHT METHOD**

*Coarse and gravelly sands; may also
include some highly structured soils
with large cracks and /or macropores*

d – well hole diameter (cm)	8.3	α^* - sat/unsat flow ratio (cm-1)	0.36
H – height of water in well (cm)	15.0	C – shape factor	1.36

R(cm/min)	Kfs (m/sec)
0.01	6.9E-08
0.02	1.4E-07
0.03	2.1E-07
0.04	2.8E-07
0.05	3.5E-07
0.06	4.1E-07
0.07	4.8E-07
0.08	5.5E-07
0.09	6.2E-07
0.10	6.9E-07
0.15	1.0E-06
0.20	1.4E-06
0.25	1.7E-06
0.30	2.1E-06
0.35	2.4E-06
0.40	2.8E-06
0.45	3.1E-06
0.50	3.5E-06
0.55	3.8E-06
0.60	4.1E-06
0.65	4.5E-06
0.70	4.8E-06
0.75	5.2E-06
0.80	5.5E-06
0.85	5.9E-06
0.90	6.2E-06
0.95	6.6E-06
1.0	6.9E-06
1.1	7.6E-06
1.2	8.3E-06
1.3	9.0E-06
1.4	9.7E-06
1.5	1.0E-05
1.6	1.1E-05
1.7	1.2E-05
1.8	1.2E-05
1.9	1.3E-05
2.0	1.4E-05
2.1	1.5E-05
2.2	1.5E-05
2.3	1.6E-05
2.4	1.7E-05
2.5	1.7E-05
2.6	1.8E-05

R(cm/min)	Kfs (m/sec)
2.7	1.9E-05
2.8	1.9E-05
2.9	2.0E-05
3.0	2.1E-05
3.1	2.1E-05
3.2	2.2E-05
3.3	2.3E-05
3.4	2.4E-05
3.5	2.4E-05
3.6	2.5E-05
3.7	2.6E-05
3.8	2.6E-05
3.9	2.7E-05
4.0	2.8E-05
4.1	2.8E-05
4.2	2.9E-05
4.3	3.0E-05
4.4	3.0E-05
4.5	3.1E-05
4.6	3.2E-05
4.7	3.2E-05
4.8	3.3E-05
4.9	3.4E-05
5.0	3.5E-05
5.5	3.8E-05
6.0	4.1E-05
6.5	4.5E-05
7.0	4.8E-05
7.5	5.2E-05
8.0	5.5E-05
8.5	5.9E-05
9.0	6.2E-05
9.5	6.6E-05
10.0	6.9E-05
11.0	7.6E-05
12.0	8.3E-05
13.0	9.0E-05
14.0	9.7E-05
15.0	1.0E-04
16.0	1.1E-04
17.0	1.2E-04
18.0	1.2E-04
19.0	1.3E-04
20.0	1.4E-04

R(cm/min)	Kfs (m/sec)
21.0	1.5E-04
22.0	1.5E-04
23.0	1.6E-04
24.0	1.7E-04
25.0	1.7E-04
26.0	1.8E-04
27.0	1.9E-04
28.0	1.9E-04
29.0	2.0E-04
30.0	2.1E-04
31.0	2.1E-04
32.0	2.2E-04
33.0	2.3E-04
34.0	2.4E-04
35.0	2.4E-04
36.0	2.5E-04
37.0	2.6E-04
38.0	2.6E-04
39.0	2.7E-04
40.0	2.8E-04
41.0	2.8E-04
42.0	2.9E-04
43.0	3.0E-04
44.0	3.0E-04
45.0	3.1E-04
46.0	3.2E-04
47.0	3.2E-04
48.0	3.3E-04
49.0	3.4E-04
50.0	3.5E-04
55.0	3.8E-04
60.0	4.1E-04
65.0	4.5E-04
70.0	4.8E-04
75.0	5.2E-04
80.0	5.5E-04
85.0	5.9E-04
90.0	6.2E-04
95.0	6.6E-04
100.0	6.9E-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 Standard ETC 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 STANDARD 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	5.3E-08
0.02	1.1E-07
0.03	1.6E-07
0.04	2.1E-07
0.05	2.7E-07
0.06	3.2E-07
0.07	3.7E-07
0.08	4.3E-07
0.09	4.8E-07
0.10	5.3E-07
0.15	8.0E-07
0.20	1.1E-06
0.25	1.3E-06
0.30	1.6E-06
0.35	1.9E-06
0.40	2.1E-06
0.45	2.4E-06
0.50	2.7E-06
0.55	2.9E-06
0.60	3.2E-06
0.65	3.5E-06
0.70	3.7E-06
0.75	4.0E-06
0.80	4.3E-06
0.85	4.5E-06
0.90	4.8E-06
0.95	5.1E-06
1.0	5.3E-06
1.1	5.9E-06
1.2	6.4E-06
1.3	6.9E-06
1.4	7.5E-06
1.5	8.0E-06
1.6	8.5E-06
1.7	9.0E-06
1.8	9.6E-06
1.9	1.0E-05
2.0	1.1E-05
2.1	1.1E-05
2.2	1.2E-05
2.3	1.2E-05
2.4	1.3E-05
2.5	1.3E-05
2.6	1.4E-05

R(cm/min)	Kfs (m/sec)
2.7	1.4E-05
2.8	1.5E-05
2.9	1.5E-05
3.0	1.6E-05
3.1	1.6E-05
3.2	1.7E-05
3.3	1.8E-05
3.4	1.8E-05
3.5	1.9E-05
3.6	1.9E-05
3.7	2.0E-05
3.8	2.0E-05
3.9	2.1E-05
4.0	2.1E-05
4.1	2.2E-05
4.2	2.2E-05
4.3	2.3E-05
4.4	2.3E-05
4.5	2.4E-05
4.6	2.4E-05
4.7	2.5E-05
4.8	2.6E-05
4.9	2.6E-05
5.0	2.7E-05
5.5	2.9E-05
6.0	3.2E-05
6.5	3.5E-05
7.0	3.7E-05
7.5	4.0E-05
8.0	4.3E-05
8.5	4.5E-05
9.0	4.8E-05
9.5	5.1E-05
10.0	5.3E-05
11.0	5.9E-05
12.0	6.4E-05
13.0	6.9E-05
14.0	7.5E-05
15.0	8.0E-05
16.0	8.5E-05
17.0	9.0E-05
18.0	9.6E-05
19.0	1.0E-04
20.0	1.1E-04

R(cm/min)	Kfs (m/sec)
21.0	1.1E-04
22.0	1.2E-04
23.0	1.2E-04
24.0	1.3E-04
25.0	1.3E-04
26.0	1.4E-04
27.0	1.4E-04
28.0	1.5E-04
29.0	1.5E-04
30.0	1.6E-04
31.0	1.6E-04
32.0	1.7E-04
33.0	1.8E-04
34.0	1.8E-04
35.0	1.9E-04
36.0	1.9E-04
37.0	2.0E-04
38.0	2.0E-04
39.0	2.1E-04
40.0	2.1E-04
41.0	2.2E-04
42.0	2.2E-04
43.0	2.3E-04
44.0	2.3E-04
45.0	2.4E-04
46.0	2.4E-04
47.0	2.5E-04
48.0	2.6E-04
49.0	2.6E-04
50.0	2.7E-04
52.0	2.8E-04
54.0	2.9E-04
56.0	3.0E-04
58.0	3.1E-04
60.0	3.2E-04
62.0	3.3E-04
64.0	3.4E-04
66.0	3.5E-04
68.0	3.6E-04
70.0	3.7E-04
72.0	3.8E-04
74.0	3.9E-04
76.0	4.0E-04
78.0	4.2E-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 Standard ETC 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 STANDARD 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	3.1E-09
0.002	6.3E-09
0.003	9.4E-09
0.004	1.3E-08
0.005	1.6E-08
0.006	1.9E-08
0.007	2.2E-08
0.008	2.5E-08
0.009	2.8E-08
0.010	3.1E-08
0.015	4.7E-08
0.020	6.3E-08
0.025	7.8E-08
0.030	9.4E-08
0.035	1.1E-07
0.040	1.3E-07
0.045	1.4E-07
0.050	1.6E-07
0.055	1.7E-07
0.060	1.9E-07
0.065	2.0E-07
0.070	2.2E-07
0.075	2.4E-07
0.080	2.5E-07
0.085	2.7E-07
0.090	2.8E-07
0.095	3.0E-07
0.10	3.1E-07
0.15	4.7E-07
0.20	6.3E-07
0.25	7.8E-07
0.30	9.4E-07
0.35	1.1E-06
0.40	1.3E-06
0.45	1.4E-06
0.50	1.6E-06
0.55	1.7E-06
0.60	1.9E-06
0.65	2.0E-06
0.70	2.2E-06
0.75	2.4E-06
0.80	2.5E-06
0.85	2.7E-06
0.90	2.8E-06

R(cm/min)	Kfs (m/sec)
0.95	3.0E-06
1.00	3.1E-06
1.10	3.5E-06
1.20	3.8E-06
1.30	4.1E-06
1.40	4.4E-06
1.50	4.7E-06
1.60	5.0E-06
1.70	5.3E-06
1.80	5.6E-06
1.90	6.0E-06
2.00	6.3E-06
2.10	6.6E-06
2.20	6.9E-06
2.30	7.2E-06
2.40	7.5E-06
2.50	7.8E-06
2.60	8.2E-06
2.70	8.5E-06
2.80	8.8E-06
2.90	9.1E-06
3.00	9.4E-06
3.10	9.7E-06
3.20	1.0E-05
3.30	1.0E-05
3.40	1.1E-05
3.50	1.1E-05
3.60	1.1E-05
3.70	1.2E-05
3.80	1.2E-05
3.90	1.2E-05
4.00	1.3E-05
4.10	1.3E-05
4.20	1.3E-05
4.30	1.3E-05
4.40	1.4E-05
4.50	1.4E-05
4.60	1.4E-05
4.70	1.5E-05
4.80	1.5E-05
4.90	1.5E-05
5.00	1.6E-05
5.10	1.6E-05
5.20	1.6E-05

R(cm/min)	Kfs (m/sec)
5.30	1.7E-05
5.40	1.7E-05
5.50	1.7E-05
5.60	1.8E-05
5.70	1.8E-05
5.80	1.8E-05
5.90	1.9E-05
6.00	1.9E-05
6.10	1.9E-05
6.20	1.9E-05
6.30	2.0E-05
6.40	2.0E-05
6.50	2.0E-05
6.60	2.1E-05
6.70	2.1E-05
6.80	2.1E-05
6.90	2.2E-05
7.00	2.2E-05
7.50	2.4E-05
8.00	2.5E-05
8.50	2.7E-05
9.00	2.8E-05
9.50	3.0E-05
10.0	3.1E-05
11.0	3.5E-05
12.0	3.8E-05
13.0	4.1E-05
14.0	4.4E-05
15.0	4.7E-05
16.0	5.0E-05
17.0	5.3E-05
18.0	5.6E-05
19.0	6.0E-05
20.0	6.3E-05
25.0	7.8E-05
30.0	9.4E-05
35.0	1.1E-04
40.0	1.3E-04
45.0	1.4E-04
50.0	1.6E-04
55.0	1.7E-04
60.0	1.9E-04
65.0	2.0E-04
70.0	2.2E-04

R – quasi steady-state rate of fall

Kfs – field saturated hydraulic conductivity

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HEAD WELL PERMEAMETER
SINGLE PONDED HEIGHT METHOD**

*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	1.0E-09
0.002	2.1E-09
0.003	3.1E-09
0.004	4.2E-09
0.005	5.2E-09
0.006	6.2E-09
0.007	7.3E-09
0.008	8.3E-09
0.009	9.4E-09
0.010	1.0E-08
0.015	1.6E-08
0.020	2.1E-08
0.025	2.6E-08
0.030	3.1E-08
0.035	3.6E-08
0.040	4.2E-08
0.045	4.7E-08
0.050	5.2E-08
0.055	5.7E-08
0.060	6.2E-08
0.065	6.8E-08
0.070	7.3E-08
0.075	7.8E-08
0.080	8.3E-08
0.085	8.9E-08
0.090	9.4E-08
0.095	9.9E-08
0.10	1.0E-07
0.15	1.6E-07
0.20	2.1E-07
0.25	2.6E-07
0.30	3.1E-07
0.35	3.6E-07
0.40	4.2E-07
0.45	4.7E-07
0.50	5.2E-07
0.55	5.7E-07
0.60	6.2E-07
0.65	6.8E-07
0.70	7.3E-07
0.75	7.8E-07
0.80	8.3E-07
0.85	8.9E-07
0.90	9.4E-07

R(cm/min)	Kfs (m/sec)
0.95	9.9E-07
1.00	1.0E-06
1.10	1.1E-06
1.20	1.2E-06
1.30	1.4E-06
1.40	1.5E-06
1.50	1.6E-06
1.60	1.7E-06
1.70	1.8E-06
1.80	1.9E-06
1.90	2.0E-06
2.00	2.1E-06
2.10	2.2E-06
2.20	2.3E-06
2.30	2.4E-06
2.40	2.5E-06
2.50	2.6E-06
2.60	2.7E-06
2.70	2.8E-06
2.80	2.9E-06
2.90	3.0E-06
3.00	3.1E-06
3.10	3.2E-06
3.20	3.3E-06
3.30	3.4E-06
3.40	3.5E-06
3.50	3.6E-06
3.60	3.7E-06
3.70	3.9E-06
3.80	4.0E-06
3.90	4.1E-06
4.00	4.2E-06
4.10	4.3E-06
4.20	4.4E-06
4.30	4.5E-06
4.40	4.6E-06
4.50	4.7E-06
4.60	4.8E-06
4.70	4.9E-06
4.80	5.0E-06
4.90	5.1E-06
5.00	5.2E-06
5.10	5.3E-06
5.20	5.4E-06

R(cm/min)	Kfs (m/sec)
5.30	5.5E-06
5.40	5.6E-06
5.50	5.7E-06
5.60	5.8E-06
5.70	5.9E-06
5.80	6.0E-06
5.90	6.1E-06
6.00	6.2E-06
6.10	6.4E-06
6.20	6.5E-06
6.30	6.6E-06
6.40	6.7E-06
6.50	6.8E-06
6.60	6.9E-06
6.70	7.0E-06
6.80	7.1E-06
6.90	7.2E-06
7.00	7.3E-06
7.50	7.8E-06
8.00	8.3E-06
8.50	8.9E-06
9.00	9.4E-06
9.50	9.9E-06
10.0	1.0E-05
11.0	1.1E-05
12.0	1.2E-05
13.0	1.4E-05
14.0	1.5E-05
15.0	1.6E-05
16.0	1.7E-05
17.0	1.8E-05
18.0	1.9E-05
19.0	2.0E-05
20.0	2.1E-05
25.0	2.6E-05
30.0	3.1E-05
35.0	3.6E-05
40.0	4.2E-05
45.0	4.7E-05
50.0	5.2E-05
55.0	5.7E-05
60.0	6.2E-05
65.0	6.8E-05
70.0	7.3E-05

R – quasi steady-state rate of fall

Kfs – field saturated hydraulic conductivity

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