



Experimental study on the evolutions of normal stiffness of fractured granites after different temperature treatments

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Appendix

Table 1 Physical and mechanical properties of tested granite specimens

Sample No.	$T/^\circ\text{C}$	Water condition	Rotation angle/ $^\circ$	Initial aperture/mm	$\delta_{\max}/\text{mm}$	$\sigma_{\min}/\text{MPa}$	$\sigma_{\max}/\text{MPa}$	$K_{n\delta-\max}/(\text{MPa}\cdot\text{m}^{-1})$	$K_n=a\varepsilon^2+b\varepsilon$	
									a	b
1	25	Dry	—	—	0.30	—	17.30	89.06	49584	0
2	25	Dry	0	0	0.20	—	12.07	89.14	31826	0
3	25	Dry	10	1.08	5.35	0.27	82.61	37.22	5371	311
4	25	Dry	20	1.37	4.70	0.28	187.13	77.16	3044	1311
5	25	Dry	30	2.68	5.98	0.25	196.06	69.58	550	1200
6	25	Dry	40	3.71	6.01	0.32	204.69	67.19	3133	875
7	25	Dry	50	4.32	6.39	0.32	92.44	22.26	1353	260
8	25	Dry	60	4.61	6.49	0.41	142.81	53.85	9600	112
9	25	Dry	70	4.27	5.78	0.52	91.83	33.31	3418	304
10	25	Dry	80	2.17	5.66	0.51	73.65	24.84	2405	300
11	25	Dry	90	5.52	6.45	0.50	155.09	41.25	1582	527
12	25	Dry	100	3.37	6.01	0.52	135.58	32.53	2100	500
13	25	Dry	120	6.32	8.73	0.01	157.43	50.09	4258	20
14	25	Dry	140	6.84	8.70	0.51	241.31	58.38	7008	92
15	25	Dry	160	4.88	7.40	0.52	101.25	36.50	4857	100
16	25	Dry	180	4.14	5.97	0.52	80.83	25.75	2282	298
17	25	Saturated	—	—	0.13	—	8.37	89.03	70354	0
18	25	Saturated	0	0	0.25	—	17.27	93.14	41529	0
19	25	Saturated	10	2.43	3.16	0.51	163.03	85.72	6219	2731
20	25	Saturated	20	3.13	4.74	0.55	153.92	63.38	5588	1255
21	25	Saturated	30	2.78	5.15	0.57	164.34	65.87	15295	530
22	25	Saturated	40	3.87	4.59	0.53	179.40	78.94	9351	1267
23	25	Saturated	50	2.81	4.65	0.51	152.03	63.47	9594	954
24	25	Saturated	60	4.07	6.05	0.56	194.05	74.05	10967	496

to be continued

continued

Sample No.	$T/^{\circ}\text{C}$	Water condition	Rotation angle/ $(^{\circ})$	Initial aperture/mm	$\delta_{\max}/\text{mm}$	$\sigma_{\min}/\text{MPa}$	$\sigma_{\max}/\text{MPa}$	$K_{\text{nd-max}}/(\text{MPa}\cdot\text{m}^{-1})$	$K_n=a\varepsilon^2+b\varepsilon$	
									a	b
25	25	Saturated	70	4.17	6.52	0.51	141.59	42.68	6498	310
26	25	Saturated	80	9.16	8.63	0.52	199.01	53.10	4230	220
27	25	Saturated	90	6.02	7.67	0.76	173.93	54.14	4572	560
28	25	Saturated	100	5.01	6.56	0.57	164.42	59.90	10440	202
29	25	Saturated	120	6.61	8.33	0.6	149.74	43.17	5770	61
30	25	Saturated	140	7.6	9.12	0.73	165.36	48.98	7583	-180
31	25	Saturated	160	8.57	9.12	0.57	204.64	69.89	7683	-56
32	25	Saturated	180	5.03	7.96	0.53	157.43	57.88	12477	-350
33	100	Dry	—	—	0.10	—	5.31	48.55	62255	0
34	100	Dry	0	0	0.11	—	5.22	51.74	58844	0
35	100	Dry	10	2.81	6.37	0.52	86.18	27.59	1824	175
36	100	Dry	20	3.47	6.61	0.54	114.14	26.18	1990	242
37	100	Dry	30	3.71	5.58	0.54	120.66	28.78	1646	445
38	100	Dry	40	5.84	7.76	0.54	89.79	19.76	961	189
39	100	Dry	50	3.48	6.86	0.53	141.49	45.24	5874	156
40	100	Dry	60	3.17	6.99	0.62	91.93	26.01	1334	130
41	100	Dry	70	7.43	8.49	0.5	174.30	49.86	5069	140
42	100	Dry	80	6.39	7.97	0.51	115.56	27.76	490	286
43	100	Dry	90	7.99	11.49	0.57	89.79	20.02	1256	20
44	100	Dry	100	4.76	6.76	0.73	102.98	28.03	5140	540
45	100	Dry	120	4.22	6.73	0.65	119.08	29.68	727	463
46	100	Dry	140	12.1	14.33	1.07	112.05	27.28	1407	-46
47	100	Dry	160	4.01	5.84	0.64	141.54	39.59	2275	638
48	100	Dry	180	6.82	8.30	0.6	105.58	30.70	3110	78
49	100	Saturated	—	—	0.16	—	12.20	91.44	69978	0
50	100	Saturated	0	0	0.52	—	35.51	93.54	21028	0
51	100	Saturated	10	1.18	2.80	0.58	115.12	65.15	37442	4424
52	100	Saturated	20	1.17	3.67	0.54	101.96	57.79	1376	1371
53	100	Saturated	30	2.47	3.61	0.5	103.34	45.81	47855	934
54	100	Saturated	40	3.3	5.54	0.6	103.29	33.89	1959	540
55	100	Saturated	50	5.47	7.22	0.53	102.88	33.91	3166	100
56	100	Saturated	60	3.08	4.90	0.51	103.49	27.25	13010	384
57	100	Saturated	70	2.81	4.09	0.49	114.34	55.32	4379	1096
58	100	Saturated	80	5.4	5.98	0.54	113.12	33.42	345	551
59	100	Saturated	90	6.48	7.07	0.51	105.48	29.51	1060	195
60	100	Saturated	100	4.04	4.77	0.52	0.00	82.96	12431	286
61	100	Saturated	120	17.51	11.55	0.48	103.90	29.96	1850	-13
62	100	Saturated	140	3.6	4.25	0.58	107.46	47.34	73895	1684
63	100	Saturated	160	4.62	5.83	0.52	102.63	36.36	1362	481
64	100	Saturated	180	4.49	5.89	0.54	121.06	41.09	12994	88
65	200	Dry	—	—	0.30	—	19.01	93.05	49191	0

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Sample No.	$T/^{\circ}\text{C}$	Water condition	Rotation angle/ $^{\circ}$	Initial aperture/mm	$\delta_{\max}/\text{mm}$	$\sigma_{\min}/\text{MPa}$	$\sigma_{\max}/\text{MPa}$	$K_{\text{nd-max}}/(\text{MPa}\cdot\text{m}^{-1})$	$K_n=a\varepsilon^2+b\varepsilon$	
									a	b
66	200	Dry	0	0	0.30	—	19.61	101.16	36692	0
67	200	Dry	10	0.95	4.40	0.53	118.72	68.48	8271	1090
68	200	Dry	20	2.68	4.53	0.6	154.95	63.48	11642	716
69	200	Dry	30	3.79	5.97	0.5	114.75	47.46	11765	827
70	200	Dry	40	3.33	5.92	0.53	105.43	38.64	13238	60
71	200	Dry	50	7.54	8.85	0.51	134.37	43.59	6172	10
72	200	Dry	60	5.25	7.33	0.54	106.90	36.18	7900	-320
73	200	Dry	70	5.8	6.28	0.58	129.47	41.21	6268	164
74	200	Dry	80	9.04	10.53	0.56	130.43	36.04	5836	-20
75	200	Dry	90	8.99	10.02	0.3	155.34	46.14	2265	-103
76	200	Dry	100	5.66	7.42	0.6	93.97	22.75	4440	-90
77	200	Dry	120	5.68	7.50	0.5	140.79	46.58	6289	-100
78	200	Dry	140	6.02	7.68	0.51	123.41	27.87	2600	-50
79	200	Dry	160	11.66	12.57	0.52	198.07	44.87	14236	240
80	200	Dry	180	5.85	7.14	0.61	166.95	54.58	5715	167
81	200	Saturated	—	—	0.20	—	13.00	84.64	34600	0
82	200	Saturated	0	0	0.29	—	15.80	79.16	36692	0
83	200	Saturated	10	2.57	3.64	0.87	156.16	69.12	139111	2228
84	200	Saturated	20	3.07	4.51	0.52	138.10	54.88	103822	160
85	200	Saturated	30	3.05	4.84	0.64	159.11	58.48	4298	375
86	200	Saturated	40	4.33	6.79	0.55	175.79	58.02	3639	366
87	200	Saturated	50	6.28	8.37	0.7	146.48	47.86	4769	13
88	200	Saturated	60	6.82	9.78	0.62	177.86	60.30	3211	182
89	200	Saturated	70	5.77	7.53	0.57	153.57	38.73	2245	420
90	200	Saturated	80	6.17	8.83	0.67	149.81	41.83	3538	-62
91	200	Saturated	90	12	13.94	0.61	130.38	35.77	4219	-40
92	200	Saturated	100	11.72	10.53	0.67	163.98	45.93	457	330
93	200	Saturated	120	8.34	8.80	1.04	148.73	46.43	2690	330
94	200	Saturated	140	8.73	10.67	0.72	131.08	27.46	2788	220
95	200	Saturated	160	5.97	6.77	0.77	151.76	56.18	2490	1
96	200	Saturated	180	6.56	7.48	0.80	150.73	45.55	7240	230
97	400	Dry	—	—	0.30	—	14.12	72.95	25478	0
98	400	Dry	0	0	0.29	—	11.87	60.55	21364	0
99	400	Dry	10	1.91	5.56	0.51	129.16	46.22	20239	1737
100	400	Dry	20	2.19	6.22	0.5	140.42	44.79	4152	750
101	400	Dry	30	3.42	7.06	0.51	184.93	45.43	5976	820
102	400	Dry	40	4.98	7.23	0.52	165.48	52.08	5521	300
103	400	Dry	50	4.51	7.91	0.55	114.95	27.88	4154	100
104	400	Dry	60	6.43	8.92	0.51	153.66	58.57	5160	50
105	400	Dry	70	5.03	7.22	0.52	126.05	27.77	1712	290
106	400	Dry	80	4.28	7.08	0.51	158.91	63.95	10166	150

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Sample No.	$T/^{\circ}\text{C}$	Water condition	Rotation angle/ $(^{\circ})$	Initial aperture/mm	$\delta_{\max}/\text{mm}$	$\sigma_{\min}/\text{MPa}$	$\sigma_{\max}/\text{MPa}$	$K_{\text{nd-max}}/(\text{MPa}\cdot\text{m}^{-1})$	$K_n=a\varepsilon^2+b\varepsilon$	
									a	b
107	400	Dry	90	3.34	6.64	0.52	99.11	29.46	845	350
108	400	Dry	100	5.35	8.57	0.55	107.92	35.58	5252	-60
109	400	Dry	120	3.63	6.60	0.58	119.79	38.35	2980	-30
110	400	Dry	140	5.98	7.20	0.55	111.18	40.13	8636	-30
111	400	Dry	160	10.23	10.63	0.51	127.07	33.12	3100	-36
112	400	Dry	180	9.71	12.19	0.49	94.83	20.18	1616	-23
113	400	Saturated	—	—	0.90	—	63.05	63.05	6657	0
114	400	Saturated	0	0	0.49	—	19.48	69.94	14238	0
115	400	Saturated	10	2.6	4.60	0.54	106.04	37.40	28581	560
116	400	Saturated	20	3.29	4.30	0.56	122.93	59.88	19434	590
117	400	Saturated	30	5.18	6.55	1.19	107.96	45.37	5362	194
118	400	Saturated	40	4.36	5.16	0.52	112.10	47.28	16426	182
119	400	Saturated	50	3.37	6.32	0.56	129.63	52.21	9943	117
120	400	Saturated	60	5.21	4.28	2.80	110.40	48.38	8606	800
121	400	Saturated	70	8.69	9.50	0.79	106.65	38.38	963	176
122	400	Saturated	80	3.4	6.61	0.65	105.30	22.06	1304	440
123	400	Saturated	90	5.55	8.00	0.60	116.72	25.41	1682	235
124	400	Saturated	100	2.92	4.70	0.75	113.13	48.33	6821	578
125	400	Saturated	120	3.51	5.86	0.58	106.63	43.93	5248	332
126	400	Saturated	140	12.66	8.35	0.7	120.01	35.80	3531	114
127	400	Saturated	160	8.9	8.55	0.83	119.97	36.27	3582	70
128	400	Saturated	180	6.18	6.87	0.53	111.54	33.16	2561	256
129	600	Dry	—	—	0.53	—	20.62	63.17	11921	0
130	600	Dry	0	0	0.93	—	24.45	45.30	5068	0
131	600	Dry	10	2.24	5.29	0.64	104.97	34.51	13370	455
132	600	Dry	20	1.36	5.15	0.32	76.45	30.01	2090	476
133	600	Dry	30	3.95	5.17	0.28	62.90	28.60	1200	-20
134	600	Dry	40	6.4	8.88	0.25	60.46	15.41	2678	-30
135	600	Dry	50	6.19	7.54	0.54	105.33	35.18	4750	80
136	600	Dry	60	5.39	7.75	0.53	130.33	44.13	5084	100
137	600	Dry	70	5.08	8.81	0.52	112.81	31.42	5578	-108
138	600	Dry	80	6.33	6.53	0.51	148.77	56.09	12512	56
139	600	Dry	90	10.04	12.52	0.49	123.81	36.49	3110	-136
140	600	Dry	100	3.35	5.17	0.54	103.75	35.52	3160	490
141	600	Dry	120	5.72	7.91	0.53	120.20	31.53	3701	140
142	600	Dry	140	7.92	8.91	0.63	99.57	29.85	2109	60
143	600	Dry	160	6.32	8.03	0.53	101.20	29.65	1254	218
144	600	Dry	180	5.14	7.02	0.54	84.24	26.52	375	300
145	600	Saturated	—	—	0.92	—	35.41	63.46	7369	0
146	600	Saturated	0	0	1.11	—	47.42	62.25	6571	0
147	600	Saturated	10	1.28	4.12	0.78	125.02	57.75	11899	1070

to be continued

Continued

Sample No.	$T/^{\circ}\text{C}$	Water condition	Rotation angle/ $^{\circ}$	Initial aperture/mm	$\delta_{\max}/\text{mm}$	$\sigma_{\min}/\text{MPa}$	$\sigma_{\max}/\text{MPa}$	$K_{\text{nd-max}}/(\text{MPa}\cdot\text{m}^{-1})$	$K_n=a\varepsilon^2+b\varepsilon$	
									a	b
148	600	Saturated	20	2.36	5.15	0.54	148.74	65.21	20252	300
149	600	Saturated	30	4.1	5.48	0.64	110.30	52.37	17474	-4
150	600	Saturated	40	3.07	4.52	0.71	110.77	61.31	30900	-13
151	600	Saturated	50	4.25	4.92	0.7	107.80	48.39	15385	262
152	600	Saturated	60	4.1	5.95	0.94	105.22	42.65	10306	97
153	600	Saturated	70	10.3	8.89	0.55	113.58	32.10	5038	-56
154	600	Saturated	80	8.03	9.97	0.92	187.43	63.24	8077	-237
155	600	Saturated	90	6.05	7.00	0.004	107.65	45.38	8482	-25
156	600	Saturated	100	4.36	6.53	0.63	111.13	39.25	8643	66
157	600	Saturated	120	7.22	7.46	0.61	130.52	41.33	9462	-83
158	600	Saturated	140	6.13	7.77	0.52	112.92	41.31	8341	-120
159	600	Saturated	160	7.48	8.64	0.78	104.65	38.94	7893	-217
160	600	Saturated	180	3.7	5.52	0.64	110.25	50.38	13664	113

Table 2 The original data used for the fitting Eqs. (5) and (6)

Dry condition			Saturated condition		
Case number	Experimental results	Results predicted by Eq. (5)	Case number	Experimental results	Results predicted by Eq. (6)
D-1	4.06	7.22	S-1	10.03	3.72
D-2	6.29	16.41	S-2	23.95	7.47
D-3	10.20	25.43	S-3	16.91	11.17
D-4	8.87	34.66	S-4	37.55	14.89
D-5	13.67	43.80	S-5	60.56	18.59
D-6	13.86	52.83	S-6	67.48	22.32
D-7	24.20	61.99	S-7	29.94	25.99
D-8	5.68	71.14	S-8	75.60	29.72
D-9	30.55	80.20	S-9	84.67	33.41
D-10	37.22	89.34	S-10	85.72	37.09
D-11	21.77	5.16	S-11	12.60	4.52
D-12	29.44	11.90	S-12	15.01	9.07
D-13	30.83	18.75	S-13	18.29	13.61
D-14	24.08	25.45	S-14	25.22	18.14
D-15	46.23	32.29	S-15	24.46	22.62
D-16	28.03	39.05	S-16	41.60	27.13
D-17	31.44	45.84	S-17	22.71	31.64
D-18	40.03	52.62	S-18	12.64	36.14
D-19	69.17	59.38	S-19	52.15	40.61
D-20	77.16	66.14	S-20	63.38	45.06
D-21	8.92	4.42	S-21	10.57	5.83
D-22	16.22	9.82	S-22	7.59	11.67
D-23	19.29	15.22	S-23	6.37	17.47
D-24	47.53	20.63	S-24	14.24	23.30

to be continued

Continued

Dry condition			Saturated condition		
Case number	Experimental results	Results predicted by Eq. (5)	Case number	Experimental results	Results predicted by Eq. (6)
D-25	39.01	26.00	S-25	19.50	29.14
D-26	8.92	31.40	S-26	29.42	34.91
D-27	28.03	36.83	S-27	48.18	40.72
D-28	35.85	42.22	S-28	65.53	46.47
D-29	54.82	47.61	S-29	55.42	52.21
D-30	69.58	53.02	S-30	65.87	57.97
D-31	9.12	3.58	S-31	7.67	4.08
D-32	11.71	7.87	S-32	10.21	8.15
D-33	20.68	12.20	S-33	16.77	12.22
D-34	37.07	16.52	S-34	18.96	16.27
D-35	26.01	20.84	S-35	35.36	20.33
D-36	27.74	25.15	S-36	51.00	24.35
D-37	33.09	29.49	S-37	46.05	28.39
D-38	45.99	33.79	S-38	70.01	32.41
D-39	61.95	38.14	S-39	57.64	36.39
D-40	67.19	42.44	S-40	78.94	40.42
D-41	5.54	3.36	S-41	1.46	5.12
D-42	11.56	7.43	S-42	15.67	10.26
D-43	4.51	11.49	S-43	4.16	15.39
D-44	32.28	15.53	S-44	17.17	20.50
D-45	12.86	19.57	S-45	36.14	25.61
D-46	9.62	23.62	S-46	31.34	30.72
D-47	5.71	29.74	S-47	48.73	35.79
D-48	10.48	31.77	S-48	44.94	40.87
D-49	28.92	35.79	S-49	56.67	45.94
D-50	22.26	39.88	S-50	63.47	50.98
D-51	2.40	3.30	S-51	8.55	5.11
D-52	6.80	7.26	S-52	9.78	10.25
D-53	10.25	11.22	S-53	3.78	15.33
D-54	2.32	15.20	S-54	18.53	20.43
D-55	20.99	19.16	S-55	25.74	25.49
D-56	23.89	23.14	S-56	35.49	30.54
D-57	26.29	27.10	S-57	42.07	35.60
D-58	17.37	31.05	S-58	49.77	40.65
D-59	51.81	35.03	S-59	48.59	45.65
D-60	53.85	39.00	S-60	74.05	50.64
D-61	1.86	3.00	S-61	7.48	5.32
D-62	1.14	7.71	S-62	5.44	10.68
D-63	3.92	10.41	S-63	7.00	16.04
D-64	13.62	14.11	S-64	5.34	21.37
D-65	19.38	17.80	S-65	22.99	26.66

to be continued

Continued

Dry condition			Saturated condition		
Case number	Experimental results	Results predicted by Eq. (5)	Case number	Experimental results	Results predicted by Eq. (6)
D-66	8.54	21.48	S-66	14.12	31.97
D-67	22.58	25.17	S-67	30.92	37.25
D-68	12.48	28.91	S-68	35.13	42.51
D-69	28.65	32.59	S-69	41.93	47.76
D-70	33.31	36.31	S-70	42.68	53.03
D-71	4.93	4.50	S-71	4.85	3.97
D-72	10.04	10.15	S-72	7.56	7.93
D-73	1.15	19.91	S-73	4.51	11.88
D-74	16.77	21.37	S-74	13.47	15.84
D-75	18.28	26.99	S-75	18.93	19.74
D-76	18.66	32.63	S-76	21.40	23.63
D-77	18.54	38.29	S-77	30.52	27.52
D-78	12.49	43.91	S-78	27.06	31.41
D-79	1.13	49.56	S-79	37.20	35.26
D-80	24.84	55.19	S-80	53.10	39.09
D-81	19.24	2.85	S-81	1.67	4.83
D-82	11.04	6.23	S-82	4.33	9.72
D-83	14.30	9.67	S-83	7.20	14.57
D-84	23.88	13.09	S-84	23.88	19.40
D-85	21.69	16.51	S-85	9.13	24.22
D-86	21.87	19.91	S-86	17.91	29.03
D-87	14.42	23.33	S-87	45.34	33.82
D-88	29.23	26.73	S-88	27.79	38.59
D-89	38.95	30.18	S-89	30.29	43.32
D-90	41.25	33.57	S-90	54.14	48.07
D-91	7.68	3.76	S-91	4.73	4.77
D-92	6.04	8.38	S-92	6.81	9.55
D-93	14.37	12.94	S-93	8.43	14.28
D-94	19.52	17.54	S-94	13.45	19.01
D-95	30.65	22.15	S-95	24.30	23.74
D-96	29.17	26.76	S-96	15.85	28.45
D-97	22.01	31.37	S-97	28.70	33.14
D-98	32.32	35.93	S-98	34.37	37.84
D-99	30.26	40.57	S-99	48.73	42.51
D-100	32.53	45.13	S-100	59.90	47.13
D-101	2.63	3.75	S-101	0.83	4.77
D-102	0.31	8.94	S-102	5.01	9.58
D-103	4.04	12.34	S-103	4.33	14.36
D-104	5.02	16.64	S-104	13.86	19.09
D-105	12.43	20.92	S-105	15.32	23.84

to be continued

Continued

Dry condition			Saturated condition		
Case number	Experimental results	Results predicted by Eq. (5)	Case number	Experimental results	Results predicted by Eq. (6)
D-106	27.87	25.23	S-106	1.95	28.57
D-107	28.25	29.51	S-107	13.55	33.26
D-108	17.41	33.80	S-108	38.39	37.93
D-109	28.92	38.09	S-109	26.06	42.59
D-110	50.09	42.39	S-110	43.17	47.26
D-111	6.56	3.55	S-111	3.02	4.83
D-112	15.85	7.63	S-112	6.61	9.69
D-113	13.52	11.69	S-113	9.45	14.54
D-114	7.03	15.75	S-114	12.62	19.35
D-115	14.00	19.80	S-115	8.75	24.15
D-116	14.15	23.86	S-116	4.61	28.95
D-117	31.14	27.91	S-117	17.05	33.71
D-118	51.52	31.97	S-118	31.00	38.46
D-119	63.47	36.03	S-119	44.51	43.16
D-120	58.38	40.10	S-120	48.98	47.86
D-121	2.40	3.63	S-121	8.54	4.47
D-122	1.03	7.86	S-122	2.72	8.96
D-123	4.40	12.13	S-123	11.23	13.46
D-124	6.61	16.38	S-124	4.75	17.92
D-125	11.10	20.63	S-125	19.68	22.37
D-126	18.07	24.91	S-126	20.08	26.81
D-127	26.11	29.18	S-127	32.18	31.22
D-128	7.72	33.44	S-128	6.85	35.60
D-129	31.91	37.66	S-129	49.22	39.97
D-130	36.50	41.93	S-130	69.89	44.34
D-131	0.66	3.05	S-131	4.79	5.47
D-132	2.85	6.85	S-132	2.53	10.96
D-133	9.05	10.64	S-133	0.37	16.44
D-134	13.03	14.40	S-134	4.95	21.89
D-135	17.22	18.17	S-135	13.78	27.29
D-136	0.90	21.97	S-136	14.63	32.69
D-137	11.81	25.76	S-137	15.23	38.10
D-138	18.30	29.53	S-138	17.89	43.46
D-139	23.41	33.31	S-139	41.17	48.77
D-140	25.75	37.11	S-140	57.88	54.10
D-141	3.89	4.02	S-141	30.13	2.63
D-142	12.34	9.24	S-142	21.20	5.36
D-143	35.67	14.41	S-143	25.46	7.99
D-144	17.60	19.66	S-144	26.97	10.71
D-145	1.52	24.87	S-145	18.02	13.36

to be continued

Continued

Dry condition			Saturated condition		
Case number	Experimental results	Results predicted by Eq. (5)	Case number	Experimental results	Results predicted by Eq. (6)
D-146	2.89	30.09	S-146	48.51	16.06
D-147	9.89	35.29	S-147	63.66	18.76
D-148	1.99	40.51	S-148	49.25	21.42
D-149	11.53	45.75	S-149	52.67	24.10
D-150	27.59	50.97	S-150	65.15	26.80
D-151	5.71	3.80	S-151	16.80	7.89
D-152	10.58	8.69	S-152	21.86	15.95
D-153	17.37	13.54	S-153	4.26	23.94
D-154	24.85	18.42	S-154	26.45	31.97
D-155	23.70	23.33	S-155	37.08	39.93
D-156	8.38	28.20	S-156	24.17	47.87
D-157	19.65	33.05	S-157	40.36	55.88
D-158	5.15	37.93	S-158	35.51	63.85
D-159	26.90	42.81	S-159	25.01	71.71
D-160	26.18	47.68	S-160	57.79	79.65
D-161	4.82	2.92	S-161	12.71	2.94
D-162	13.45	6.87	S-162	12.67	5.93
D-163	13.72	10.80	S-163	16.62	8.89
D-164	1.38	17.26	S-164	10.36	11.84
D-165	16.92	18.67	S-165	25.49	14.81
D-166	42.33	22.63	S-166	12.17	17.73
D-167	46.94	26.55	S-167	36.26	20.68
D-168	34.03	30.48	S-168	36.85	23.63
D-169	19.84	34.43	S-169	52.16	26.57
D-170	28.78	38.36	S-170	45.67	29.49
D-171	7.23	2.76	S-171	8.40	5.34
D-172	2.93	6.66	S-172	3.53	10.74
D-173	2.01	10.57	S-173	3.52	16.09
D-174	11.24	14.49	S-174	10.08	21.43
D-175	10.71	18.37	S-175	17.10	26.76
D-176	7.15	22.30	S-176	24.30	32.09
D-177	20.00	26.20	S-177	24.24	37.43
D-178	9.14	30.13	S-178	31.92	42.70
D-179	20.35	34.00	S-179	29.05	48.01
D-180	19.76	37.92	S-180	33.89	53.28
D-181	4.48	3.83	S-181	5.98	4.68
D-182	6.23	8.70	S-182	6.43	9.34
D-183	8.97	13.55	S-183	3.92	14.02
D-184	17.08	18.43	S-184	3.69	18.67
D-185	19.77	23.27	S-185	17.08	23.29

to be continued

Continued

Dry condition			Saturated condition		
Case number	Experimental results	Results predicted by Eq. (5)	Case number	Experimental results	Results predicted by Eq. (6)
D-186	26.26	28.15	S-186	12.39	27.90
D-187	26.40	33.03	S-187	15.42	32.52
D-188	7.06	37.91	S-188	13.26	37.08
D-189	24.43	42.78	S-189	23.55	41.66
D-190	45.24	47.61	S-190	33.91	46.22
D-191	17.96	4.45	S-191	11.22	5.02
D-192	2.50	10.03	S-192	2.12	10.07
D-193	8.19	15.66	S-193	16.70	15.07
D-194	8.60	21.22	S-194	7.29	20.07
D-195	15.79	26.84	S-195	24.06	25.01
D-196	21.05	32.40	S-196	19.03	30.01
D-197	0.19	41.57	S-197	23.46	34.99
D-198	19.25	43.64	S-198	32.73	39.94
D-199	22.71	49.23	S-199	46.17	44.90
D-200	26.01	54.79	S-200	27.25	49.82
D-201	1.52	3.12	S-201	11.63	4.44
D-202	3.02	6.87	S-202	13.41	8.90
D-203	5.19	10.61	S-203	17.70	13.32
D-204	12.37	14.34	S-204	21.38	17.81
D-205	13.05	18.10	S-205	25.75	22.20
D-206	24.06	21.83	S-206	31.30	26.65
D-207	32.86	25.58	S-207	27.35	31.03
D-208	19.90	29.32	S-208	33.50	35.46
D-209	43.00	33.08	S-209	37.96	39.87
D-210	49.86	36.81	S-210	55.32	44.26
D-211	2.13	3.23	S-211	1.68	4.03
D-212	2.98	7.15	S-212	6.14	8.02
D-213	12.18	11.05	S-213	7.36	12.05
D-214	16.36	14.96	S-214	10.08	16.02
D-215	8.44	18.90	S-215	24.99	20.00
D-216	17.97	22.79	S-216	24.33	23.98
D-217	15.19	26.73	S-217	26.42	27.95
D-218	22.44	30.64	S-218	27.56	31.88
D-219	19.51	34.55	S-219	27.74	35.81
D-220	27.76	38.48	S-220	33.42	39.78
D-221	0.94	4.25	S-221	3.64	4.11
D-222	2.61	9.05	S-222	3.93	8.25
D-223	0.10	13.86	S-223	5.74	12.35
D-224	0.43	18.69	S-224	13.36	16.44
D-225	7.79	23.51	S-225	21.97	20.50

to be continued

Continued

Dry condition			Saturated condition		
Case number	Experimental results	Results predicted by Eq. (5)	Case number	Experimental results	Results predicted by Eq. (6)
D-226	12.83	28.33	S-226	23.72	24.58
D-227	3.06	33.13	S-227	9.43	28.62
D-228	16.86	37.96	S-228	1.93	32.67
D-229	12.40	42.75	S-229	32.67	36.68
D-230	20.02	47.58	S-230	29.51	40.71
D-231	7.81	1.68	S-231	2.07	5.02
D-232	2.51	6.62	S-232	13.44	10.24
D-233	20.96	6.77	S-233	13.94	15.46
D-234	9.34	9.36	S-234	14.58	20.63
D-235	6.68	11.91	S-235	28.26	25.85
D-236	17.46	14.47	S-236	27.40	30.97
D-237	21.39	17.03	S-237	23.51	36.12
D-238	17.60	19.56	S-238	56.14	41.27
D-239	33.68	22.14	S-239	64.10	46.38
D-240	14.07	24.68	S-240	82.96	51.49
D-241	6.13	3.27	S-241	3.27	3.16
D-242	4.03	7.54	S-242	0.21	6.31
D-243	1.81	11.78	S-243	3.38	9.44
D-244	20.04	16.05	S-244	6.95	12.55
D-245	14.21	20.27	S-245	2.91	15.64
D-246	18.50	24.53	S-246	6.38	18.73
D-247	19.17	28.81	S-247	11.28	21.79
D-248	33.86	33.07	S-248	16.67	24.83
D-249	14.81	37.32	S-249	7.96	27.86
D-250	29.68	41.56	S-250	29.96	30.87
D-251	2.59	5.96	S-251	26.44	1.43
D-252	0.07	12.47	S-252	11.28	2.86
D-253	3.81	14.42	S-253	18.69	4.27
D-254	3.45	18.64	S-254	22.19	5.70
D-255	3.12	22.86	S-255	29.90	7.15
D-256	7.50	27.09	S-256	8.17	8.56
D-257	6.87	31.32	S-257	39.57	9.98
D-258	13.60	35.54	S-258	31.32	11.40
D-259	11.12	39.78	S-259	47.92	12.84
D-260	27.28	43.99	S-260	35.66	14.26
D-261	5.59	2.73	S-261	2.91	4.40
D-262	10.96	6.44	S-262	8.73	8.83
D-263	10.27	10.18	S-263	5.58	13.19
D-264	18.34	13.93	S-264	14.89	17.60
D-265	25.70	17.65	S-265	8.99	21.95

to be continued

Continued

Dry condition			Saturated condition		
Case number	Experimental results	Results predicted by Eq. (5)	Case number	Experimental results	Results predicted by Eq. (6)
D-266	22.37	21.39	S-266	21.08	26.30
D-267	40.70	25.13	S-267	28.06	30.68
D-268	5.35	28.85	S-268	35.12	35.00
D-269	45.99	32.57	S-269	13.37	39.34
D-270	39.59	36.30	S-270	36.36	43.63
D-271	5.99	3.04	S-271	3.47	4.49
D-272	5.95	6.79	S-272	8.43	9.01
D-273	5.18	10.52	S-273	4.05	13.50
D-274	1.25	14.27	S-274	7.97	17.97
D-275	8.48	18.03	S-275	13.93	22.44
D-276	14.42	21.75	S-276	6.73	26.88
D-277	7.54	25.51	S-277	29.01	31.33
D-278	21.02	29.23	S-278	34.29	35.73
D-279	15.54	32.99	S-279	50.00	40.17
D-280	30.70	36.73	S-280	41.09	44.58
D-281	11.74	0.07	S-281	7.23	5.15
D-282	12.08	3.18	S-282	8.73	10.28
D-283	16.90	6.28	S-283	10.55	15.44
D-284	31.57	9.40	S-284	27.01	20.60
D-285	43.04	12.55	S-285	33.89	25.68
D-286	36.15	15.67	S-286	50.47	30.80
D-287	48.13	18.75	S-287	36.39	35.91
D-288	64.21	21.88	S-288	23.25	41.01
D-289	70.34	24.94	S-289	47.84	46.06
D-290	68.48	28.07	S-290	54.88	51.12
D-291	5.89	0.55	S-291	7.23	4.50
D-292	10.96	2.57	S-292	8.73	8.99
D-293	15.74	4.60	S-293	10.55	13.50
D-294	20.71	6.63	S-294	27.01	18.01
D-295	3.75	8.67	S-295	33.89	22.46
D-296	19.35	10.67	S-296	50.47	26.93
D-297	13.65	12.72	S-297	36.39	31.40
D-298	33.19	14.74	S-298	23.25	35.86
D-299	47.21	16.76	S-299	47.84	40.27
D-300	63.48	18.76	S-300	54.88	44.69
D-301	10.51	2.89	S-301	7.44	4.47
D-302	2.99	8.61	S-302	4.23	8.99
D-303	12.44	10.93	S-303	14.58	13.55
D-304	7.56	14.93	S-304	20.49	18.02
D-305	16.24	18.97	S-305	23.86	22.54

to be continued

Continued

Dry condition			Saturated condition		
Case number	Experimental results	Results predicted by Eq. (5)	Case number	Experimental results	Results predicted by Eq. (6)
D-306	24.96	22.96	S-306	19.32	27.04
D-307	21.28	27.01	S-307	50.25	31.50
D-308	15.39	31.03	S-308	41.94	35.97
D-309	20.10	35.04	S-309	54.38	40.47
D-310	47.46	39.09	S-310	58.48	44.92
D-311	6.85	3.15	S-311	5.27	5.07
D-312	11.97	7.54	S-312	3.25	10.14
D-313	8.50	11.98	S-313	5.52	15.21
D-314	21.33	16.34	S-314	11.67	20.26
D-315	16.73	20.77	S-315	20.87	25.28
D-316	20.81	25.18	S-316	16.25	30.31
D-317	10.68	29.59	S-317	26.96	35.30
D-318	7.24	33.97	S-318	40.95	40.29
D-319	23.56	38.38	S-319	56.53	45.26
D-320	38.64	42.77	S-320	58.02	50.21
D-321	2.56	3.10	S-321	4.93	4.80
D-322	3.43	6.89	S-322	3.38	9.62
D-323	4.13	10.66	S-323	1.56	14.43
D-324	10.11	14.46	S-324	7.26	19.24
D-325	5.54	18.27	S-325	14.70	24.01
D-326	14.02	22.05	S-326	21.44	28.79
D-327	22.67	25.83	S-327	18.35	33.52
D-328	17.11	29.64	S-328	16.61	38.23
D-329	24.61	33.44	S-329	38.77	42.94
D-330	43.59	37.23	S-330	47.86	47.62
D-331	1.70	2.99	S-331	2.35	5.30
D-332	2.69	6.90	S-332	6.04	10.59
D-333	6.04	10.85	S-333	3.98	15.83
D-334	17.14	14.75	S-334	2.62	21.07
D-335	5.51	18.72	S-335	11.70	26.27
D-336	12.83	22.61	S-336	5.00	31.46
D-337	14.55	26.55	S-337	22.00	36.62
D-338	20.53	30.51	S-338	25.92	41.74
D-339	14.72	34.44	S-339	40.64	46.86
D-340	36.18	38.36	S-340	60.30	51.95
D-341	9.78	2.24	S-341	12.11	4.29
D-342	5.10	5.40	S-342	3.91	8.60
D-343	3.81	8.55	S-343	1.49	12.89
D-344	17.87	11.69	S-344	15.42	17.18
D-345	17.94	14.82	S-345	9.63	21.46

to be continued

Continued

Dry condition			Saturated condition		
Case number	Experimental results	Results predicted by Eq. (5)	Case number	Experimental results	Results predicted by Eq. (6)
D-346	30.20	17.96	S-346	11.51	25.68
D-347	31.58	21.10	S-347	21.80	29.93
D-348	20.47	24.26	S-348	34.14	34.17
D-349	20.71	27.39	S-349	38.29	38.37
D-350	41.21	30.54	S-350	38.73	42.58
D-351	4.19	3.39	S-351	3.97	4.89
D-352	9.19	7.43	S-352	1.07	11.75
D-353	4.45	11.46	S-353	6.61	14.66
D-354	5.71	15.49	S-354	8.58	19.52
D-355	2.86	17.95	S-355	10.15	24.36
D-356	1.31	23.56	S-356	8.70	29.21
D-357	13.68	27.57	S-357	14.34	34.01
D-358	19.01	31.60	S-358	24.77	38.79
D-359	24.64	35.65	S-359	28.35	43.56
D-360	36.04	39.67	S-360	41.83	48.29
D-361	2.11	3.19	S-361	0.93	4.78
D-362	6.21	7.05	S-362	1.13	9.54
D-363	7.31	10.91	S-363	0.12	14.28
D-364	1.30	14.75	S-364	4.36	18.97
D-365	9.76	18.62	S-365	3.87	23.64
D-366	16.09	22.47	S-366	5.49	28.28
D-367	15.08	26.33	S-367	8.84	32.89
D-368	15.15	30.18	S-368	17.53	37.46
D-369	26.39	34.03	S-369	15.60	41.99
D-370	46.14	37.88	S-370	35.77	46.50
D-371	4.04	2.82	S-371	4.57	3.47
D-372	3.08	6.56	S-372	1.55	6.94
D-373	7.15	10.28	S-373	9.68	10.41
D-374	6.31	14.03	S-374	5.66	13.85
D-375	8.18	17.74	S-375	4.48	17.28
D-376	17.21	21.47	S-376	3.83	20.71
D-377	18.67	25.20	S-377	16.64	24.11
D-378	6.59	28.94	S-378	19.62	27.48
D-379	21.48	32.67	S-379	16.24	30.85
D-380	22.75	36.39	S-380	45.93	34.20
D-381	1.80	3.10	S-381	6.67	3.89
D-382	1.26	7.10	S-382	6.16	7.79
D-383	5.10	11.07	S-383	8.11	11.69
D-384	10.19	15.05	S-384	1.84	15.55
D-385	19.20	19.06	S-385	2.65	19.42

to be continued

Continued

Dry condition			Saturated condition		
Case number	Experimental results	Results predicted by Eq. (5)	Case number	Experimental results	Results predicted by Eq. (6)
D-386	26.08	23.05	S-386	13.75	23.26
D-387	31.23	27.02	S-387	13.84	27.08
D-388	25.97	31.03	S-388	26.36	30.89
D-389	21.32	35.01	S-389	23.39	34.69
D-390	46.58	38.97	S-390	46.43	38.47
D-391	4.94	3.01	S-391	2.17	4.38
D-392	5.92	6.83	S-392	3.09	8.81
D-393	2.25	10.64	S-393	3.43	13.23
D-394	12.74	14.47	S-394	2.18	17.60
D-395	8.00	18.29	S-395	7.97	21.97
D-396	15.33	22.14	S-396	17.56	26.29
D-397	18.93	25.98	S-397	21.73	30.63
D-398	21.57	29.80	S-398	4.05	34.92
D-399	34.39	33.61	S-399	5.34	39.21
D-400	27.87	37.46	S-400	27.46	43.45
D-401	2.40	3.49	S-401	9.37	3.41
D-402	3.50	7.51	S-402	3.11	8.25
D-403	10.27	11.52	S-403	14.94	10.24
D-404	5.63	15.55	S-404	4.60	13.66
D-405	12.16	19.56	S-405	17.16	17.05
D-406	10.66	23.57	S-406	20.77	20.43
D-407	16.84	27.58	S-407	38.68	23.80
D-408	18.23	31.60	S-408	54.55	27.16
D-409	30.14	35.63	S-409	51.25	30.51
D-410	44.87	39.65	S-410	56.18	33.87
D-411	6.71	2.69	S-411	13.51	4.14
D-412	2.29	6.33	S-412	0.46	8.32
D-413	7.25	9.98	S-413	14.73	12.49
D-414	14.47	13.61	S-414	11.33	16.64
D-415	17.57	17.25	S-415	13.78	20.75
D-416	19.12	20.92	S-416	9.10	24.88
D-417	30.82	24.58	S-417	25.09	28.99
D-418	34.01	28.20	S-418	26.37	33.06
D-419	38.46	31.86	S-419	41.70	37.12
D-420	54.58	35.50	S-420	45.55	41.19
D-421	14.50	0.40	S-421	7.07	4.99
D-422	11.48	2.87	S-422	8.13	9.97
D-423	21.67	5.41	S-423	8.55	15.00
D-424	21.55	7.93	S-424	15.94	19.96
D-425	22.98	10.42	S-425	33.90	24.90

to be continued

Continued

Dry condition			Saturated condition		
Case number	Experimental results	Results predicted by Eq. (5)	Case number	Experimental results	Results predicted by Eq. (6)
D-426	18.20	12.91	S-426	39.28	29.90
D-427	39.84	15.42	S-427	44.90	34.82
D-428	37.71	17.94	S-428	13.50	39.75
D-429	52.44	20.46	S-429	25.62	44.73
D-430	38.07	22.95	S-430	37.40	49.61
D-431	8.17	4.47	S-431	12.19	3.73
D-432	12.27	10.92	S-432	10.46	7.59
D-433	21.04	17.37	S-433	11.90	11.41
D-434	28.88	23.89	S-434	14.00	15.22
D-435	10.71	30.35	S-435	18.63	19.02
D-436	20.57	36.80	S-436	22.42	22.84
D-437	22.36	43.27	S-437	33.97	26.61
D-438	26.90	49.79	S-438	45.83	30.43
D-439	31.94	56.25	S-439	51.65	34.18
D-440	44.79	62.72	S-440	59.88	37.98
D-441	6.16	3.91	S-441	3.59	4.01
D-442	4.65	9.22	S-442	4.32	8.09
D-443	7.25	14.52	S-443	0.87	12.13
D-444	23.79	19.83	S-444	2.08	16.18
D-445	27.23	25.13	S-445	6.62	20.19
D-446	48.25	30.43	S-446	15.47	24.21
D-447	25.45	35.75	S-447	19.16	28.20
D-448	33.59	41.06	S-448	29.40	32.17
D-449	36.99	46.37	S-449	38.28	36.15
D-450	45.43	51.66	S-450	45.37	40.13
D-451	4.62	3.15	S-451	2.46	3.70
D-452	7.95	7.38	S-452	1.41	7.36
D-453	8.20	11.57	S-453	3.73	11.06
D-454	15.99	15.83	S-454	8.59	14.76
D-455	21.08	20.03	S-455	11.90	18.41
D-456	36.24	24.26	S-456	21.48	22.09
D-457	1.96	28.50	S-457	33.95	25.72
D-458	34.40	32.72	S-458	41.62	29.36
D-459	49.01	36.95	S-459	44.36	33.00
D-460	52.08	41.18	S-460	47.28	36.60
D-461	3.57	3.54	S-461	8.28	5.53
D-462	3.90	8.20	S-462	7.95	11.05
D-463	5.59	12.91	S-463	8.87	16.58
D-464	4.73	17.60	S-464	13.21	22.10
D-465	8.68	22.26	S-465	12.64	27.59

to be continued

Continued

Dry condition			Saturated condition		
Case number	Experimental results	Results predicted by Eq. (5)	Case number	Experimental results	Results predicted by Eq. (6)
D-466	6.29	26.94	S-466	15.25	33.07
D-467	21.30	31.62	S-467	16.77	38.51
D-468	24.45	36.33	S-468	27.73	43.96
D-469	27.67	41.02	S-469	38.47	49.37
D-470	27.88	45.71	S-470	52.21	54.79
D-471	2.82	3.46	S-471	34.25	2.62
D-472	2.33	7.82	S-472	16.86	5.24
D-473	5.28	12.19	S-473	10.50	7.87
D-474	13.74	16.53	S-474	9.01	10.48
D-475	19.03	20.91	S-475	21.80	13.11
D-476	6.39	25.25	S-476	27.31	15.70
D-477	27.03	29.64	S-477	28.06	18.30
D-478	18.58	33.99	S-478	25.25	20.90
D-479	20.04	38.35	S-479	35.23	23.48
D-480	58.57	42.72	S-480	48.38	26.08
D-481	3.12	2.96	S-481	2.59	3.70
D-482	6.83	7.03	S-482	0.11	7.42
D-483	10.58	11.08	S-483	2.81	11.13
D-484	13.72	15.12	S-484	0.69	14.82
D-485	14.81	19.18	S-485	5.68	18.50
D-486	25.55	23.22	S-486	4.21	22.14
D-487	18.22	27.25	S-487	18.24	25.79
D-488	24.51	31.34	S-488	11.53	29.41
D-489	24.07	35.38	S-489	27.12	33.01
D-490	27.77	39.44	S-490	38.38	36.61
D-491	4.40	3.34	S-491	5.83	5.39
D-492	4.66	7.86	S-492	1.24	10.88
D-493	10.44	12.39	S-493	10.12	16.39
D-494	8.24	16.93	S-494	15.97	21.86
D-495	18.80	21.47	S-495	19.42	27.31
D-496	13.09	26.03	S-496	3.70	32.73
D-497	12.20	30.55	S-497	16.84	38.15
D-498	31.83	35.09	S-498	34.18	43.58
D-499	50.86	39.61	S-499	21.32	48.94
D-500	63.95	44.16	S-500	22.06	54.34
D-501	8.83	3.56	S-501	3.09	4.44
D-502	5.05	8.57	S-502	1.69	8.93
D-503	11.35	13.58	S-503	5.86	13.39
D-504	12.35	18.59	S-504	10.51	17.84
D-505	11.05	23.62	S-505	15.57	22.27

to be continued

Continued

Dry condition			Saturated condition		
Case number	Experimental results	Results predicted by Eq. (5)	Case number	Experimental results	Results predicted by Eq. (6)
D-506	11.00	28.62	S-506	15.01	26.68
D-507	13.47	33.65	S-507	8.91	31.08
D-508	19.69	38.67	S-508	20.29	35.47
D-509	23.22	43.67	S-509	31.14	39.83
D-510	29.46	48.68	S-510	25.41	44.19
D-511	3.33	3.67	S-511	9.97	4.53
D-512	1.96	8.37	S-512	9.17	9.16
D-513	2.59	13.09	S-513	18.47	13.78
D-514	8.09	17.80	S-514	15.74	18.40
D-515	2.14	22.50	S-515	24.53	23.01
D-516	11.85	27.22	S-516	17.12	27.60
D-517	13.02	31.92	S-517	31.54	32.19
D-518	18.58	36.64	S-518	27.38	36.76
D-519	24.73	41.35	S-519	37.17	41.30
D-520	35.58	46.06	S-520	48.33	45.87
D-521	7.56	3.37	S-521	7.02	4.99
D-522	11.06	8.07	S-522	3.59	9.98
D-523	7.22	12.82	S-523	10.27	14.99
D-524	11.67	17.53	S-524	13.57	19.97
D-525	9.55	22.27	S-525	16.25	24.94
D-526	15.46	27.00	S-526	19.38	29.86
D-527	22.60	31.74	S-527	18.64	34.80
D-528	27.49	36.46	S-528	17.24	39.74
D-529	25.26	41.18	S-529	32.09	44.62
D-530	38.35	45.89	S-530	43.93	49.54
D-531	3.63	2.54	S-531	6.62	2.26
D-532	4.05	6.15	S-532	8.77	4.55
D-533	0.70	10.89	S-533	7.60	6.80
D-534	12.05	13.32	S-534	10.73	9.07
D-535	9.39	16.91	S-535	0.26	12.53
D-536	9.09	20.51	S-536	15.96	13.56
D-537	13.50	24.07	S-537	14.41	15.80
D-538	28.63	27.68	S-538	24.39	18.01
D-539	32.55	31.27	S-539	25.71	20.22
D-540	40.13	34.85	S-540	35.80	22.44
D-541	2.47	3.04	S-541	2.58	3.24
D-542	5.20	6.73	S-542	1.48	8.77
D-543	6.71	10.43	S-543	7.02	9.76
D-544	1.62	15.12	S-544	7.26	12.99
D-545	6.43	17.84	S-545	15.06	16.21

to be continued

Continued

Dry condition			Saturated condition		
Case number	Experimental results	Results predicted by Eq. (5)	Case number	Experimental results	Results predicted by Eq. (6)
D-546	8.06	21.52	S-546	13.56	19.43
D-547	12.93	25.23	S-547	8.39	22.62
D-548	14.52	28.93	S-548	22.95	25.80
D-549	24.76	32.61	S-549	26.02	28.99
D-550	33.12	36.33	S-550	36.27	32.13
D-551	2.78	3.67	S-551	9.80	3.62
D-552	3.16	8.07	S-552	8.05	7.28
D-553	0.71	13.47	S-553	5.25	10.92
D-554	1.16	16.83	S-554	9.98	14.56
D-555	8.11	21.22	S-555	17.93	18.19
D-556	3.83	25.58	S-556	14.28	21.81
D-557	6.12	29.99	S-557	21.88	25.41
D-558	12.75	34.35	S-558	27.53	29.01
D-559	18.45	38.75	S-559	14.54	32.58
D-560	20.18	43.13	S-560	33.16	36.14
D-561	3.46	2.90	S-561	8.48	7.29
D-562	6.48	8.02	S-562	6.55	14.88
D-563	14.52	13.07	S-563	10.51	22.33
D-564	24.66	18.21	S-564	13.65	29.82
D-565	23.85	23.27	S-565	23.35	37.33
D-566	11.96	28.40	S-566	34.95	44.83
D-567	17.50	33.49	S-567	42.82	52.27
D-568	22.47	38.57	S-568	43.80	59.68
D-569	25.93	43.67	S-569	47.24	67.13
D-570	34.51	48.76	S-570	57.75	74.53
D-571	3.62	4.30	S-571	5.73	5.61
D-572	3.84	11.56	S-572	4.60	11.36
D-573	6.11	18.77	S-573	6.17	17.04
D-574	10.99	25.97	S-574	13.03	22.71
D-575	13.59	33.20	S-575	19.38	28.34
D-576	18.43	40.41	S-576	27.43	33.98
D-577	16.65	47.65	S-577	41.42	39.63
D-578	15.72	54.88	S-578	46.25	45.27
D-579	24.12	62.11	S-579	57.07	50.87
D-580	30.01	69.32	S-580	65.21	56.45
D-581	3.80	2.06	S-581	2.78	3.72
D-582	3.70	5.49	S-582	1.08	7.55
D-583	3.52	8.89	S-583	4.27	11.33
D-584	3.03	12.32	S-584	8.30	15.13
D-585	7.27	15.75	S-585	14.36	18.90

to be continued

Continued

Dry condition			Saturated condition		
Case number	Experimental results	Results predicted by Eq. (5)	Case number	Experimental results	Results predicted by Eq. (6)
D-586	8.55	19.19	S-586	19.20	22.70
D-587	13.97	22.61	S-587	22.95	26.44
D-588	13.83	26.05	S-588	30.66	30.18
D-589	27.99	29.45	S-589	41.82	33.95
D-590	28.60	32.88	S-590	52.37	37.67
D-591	1.15	3.17	S-591	6.09	4.03
D-592	1.06	7.32	S-592	4.36	8.09
D-593	0.99	11.48	S-593	6.76	12.18
D-594	0.26	15.65	S-594	8.15	16.21
D-595	3.33	19.78	S-595	11.51	20.26
D-596	5.74	23.93	S-596	20.02	24.29
D-597	6.05	28.12	S-597	31.22	28.37
D-598	12.39	32.26	S-598	44.38	32.38
D-599	13.92	36.40	S-599	50.79	36.40
D-600	15.41	40.58	S-600	61.31	40.43
D-601	2.31	2.75	S-601	6.18	3.27
D-602	2.04	6.48	S-602	4.41	6.58
D-603	4.55	10.24	S-603	8.80	9.88
D-604	9.43	14.00	S-604	12.58	13.18
D-605	6.77	17.74	S-605	12.10	16.49
D-606	12.86	21.52	S-606	18.72	19.77
D-607	17.53	25.25	S-607	25.32	23.03
D-608	23.47	29.01	S-608	34.86	26.29
D-609	22.45	32.77	S-609	43.48	29.58
D-610	35.18	36.51	S-610	48.39	32.81
D-611	5.37	3.01	S-611	6.28	4.09
D-612	1.78	7.15	S-612	1.67	8.26
D-613	6.27	11.27	S-613	8.44	12.37
D-614	3.42	15.41	S-614	7.49	16.53
D-615	7.52	19.53	S-615	5.29	20.64
D-616	7.60	23.68	S-616	17.24	24.75
D-617	18.18	27.82	S-617	23.37	28.83
D-618	25.81	31.94	S-618	30.23	32.92
D-619	36.33	36.09	S-619	31.70	36.97
D-620	44.13	40.23	S-620	42.65	41.02
D-621	1.54	3.72	S-621	4.62	2.41
D-622	1.09	8.61	S-622	1.67	4.80
D-623	2.07	13.49	S-623	2.09	7.20
D-624	3.92	18.38	S-624	2.83	9.59
D-625	4.91	23.26	S-625	5.79	11.96

to be continued

Continued

Dry condition			Saturated condition		
Case number	Experimental results	Results predicted by Eq. (5)	Case number	Experimental results	Results predicted by Eq. (6)
D-626	9.73	28.15	S-626	9.76	14.33
D-627	11.72	33.03	S-627	14.23	16.68
D-628	19.76	37.92	S-628	18.52	19.02
D-629	28.46	42.81	S-629	25.11	21.34
D-630	31.42	47.68	S-630	32.10	23.68
D-631	3.96	2.21	S-631	3.38	3.81
D-632	4.19	5.41	S-632	2.12	7.69
D-633	6.86	8.61	S-633	3.66	11.54
D-634	9.46	11.80	S-634	1.65	15.36
D-635	11.66	15.02	S-635	7.22	19.17
D-636	21.02	18.23	S-636	14.56	22.96
D-637	27.62	21.41	S-637	24.45	26.73
D-638	38.90	24.61	S-638	37.44	30.49
D-639	45.11	27.83	S-639	50.59	34.22
D-640	56.09	31.04	S-640	63.24	37.93
D-641	1.19	3.73	S-641	4.14	3.40
D-642	0.99	8.20	S-642	2.64	6.83
D-643	3.23	12.66	S-643	3.58	10.23
D-644	0.78	17.11	S-644	7.51	13.62
D-645	3.54	21.58	S-645	13.67	17.01
D-646	7.69	26.05	S-646	13.02	20.37
D-647	9.55	30.49	S-647	13.83	23.74
D-648	11.42	34.96	S-648	20.70	27.08
D-649	22.57	39.42	S-649	29.16	30.43
D-650	36.49	43.88	S-650	45.38	33.77
D-651	8.84	2.24	S-651	4.90	4.14
D-652	3.41	6.07	S-652	4.27	8.29
D-653	3.86	9.89	S-653	4.60	12.45
D-654	8.51	13.76	S-654	7.94	16.60
D-655	15.17	17.59	S-655	10.79	20.68
D-656	19.78	21.49	S-656	16.93	24.82
D-657	30.72	25.32	S-657	10.22	28.94
D-658	32.63	29.17	S-658	26.52	32.99
D-659	34.07	33.01	S-659	32.95	37.07
D-660	35.52	36.81	S-660	39.25	41.15
D-661	3.80	2.90	S-661	4.59	2.87
D-662	3.82	6.86	S-662	4.76	5.75
D-663	4.32	10.84	S-663	6.22	8.64
D-664	6.62	14.81	S-664	1.57	11.47
D-665	13.73	18.78	S-665	7.72	14.33

to be continued

Continued

Dry condition			Saturated condition		
Case number	Experimental results	Results predicted by Eq. (5)	Case number	Experimental results	Results predicted by Eq. (6)
D-666	10.56	22.72	S-666	10.44	17.19
D-667	16.84	26.70	S-667	18.37	20.00
D-668	21.87	30.67	S-668	22.71	22.83
D-669	26.53	34.63	S-669	33.74	25.64
D-670	31.53	38.59	S-670	41.33	28.44
D-671	2.95	2.91	S-671	2.89	3.72
D-672	3.87	6.69	S-672	2.23	7.43
D-673	3.25	10.48	S-673	4.20	11.11
D-674	5.96	14.29	S-674	2.94	14.81
D-675	4.60	18.09	S-675	5.14	18.49
D-676	10.77	21.87	S-676	11.90	22.13
D-677	13.49	25.65	S-677	17.57	25.78
D-678	18.94	29.44	S-678	22.54	29.40
D-679	20.76	33.23	S-679	31.17	33.02
D-680	29.85	37.03	S-680	41.31	36.63
D-681	2.11	2.88	S-681	1.65	3.27
D-682	0.86	8.84	S-682	1.67	6.61
D-683	5.23	10.77	S-683	2.88	9.93
D-684	7.19	14.71	S-684	0.41	13.22
D-685	9.00	18.65	S-685	7.91	16.52
D-686	21.67	22.59	S-686	5.72	19.80
D-687	21.65	26.55	S-687	8.84	23.06
D-688	11.33	30.48	S-688	18.02	26.29
D-689	16.58	34.45	S-689	30.37	29.54
D-690	29.65	38.38	S-690	38.94	32.77
D-691	0.96	2.83	S-691	3.48	4.20
D-692	0.59	6.85	S-692	5.49	8.42
D-693	3.27	10.82	S-693	6.91	12.61
D-694	6.50	14.80	S-694	12.22	16.82
D-695	17.76	18.82	S-695	8.67	21.01
D-696	14.41	22.78	S-696	17.82	25.16
D-697	23.46	26.81	S-697	25.12	29.36
D-698	9.70	30.78	S-698	30.03	33.51
D-699	16.06	34.76	S-699	37.43	37.66
D-700	26.52	38.78	S-700	50.38	41.76