

ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION R 409

TABLES OF VICKERS HARDNESS VALUES (HV)
FOR METALLIC MATERIALS

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BRIEF HISTORY

The ISO Recommendation R 409, *Tables of Vickers Hardness Values (HV) for Metallic Materials*, was drawn up by Co-ordinating Committee on the Mechanical Testing of Metals (METESCO), the Secretariat of which is held by the British Standards Institution (BSI).

Work on this question began in 1960 and led, in 1962, to the adoption of a document which the METESCO Secretariat turned over to the General Secretariat, with the request that it be subjected to the procedures that Draft ISO Recommendations customarily follow.

In May 1962, this document was circulated, as Draft ISO Recommendation (No. 515) to all the ISO Member Bodies for enquiry. It was approved, subject to a few modifications, by the following Member Bodies:

Australia	France	Poland
Austria	Germany	Romania
Belgium	Hungary	Sweden
Canada	India	Turkey
Chile	Israel	United Kingdom
Czechoslovakia	Italy	U.S.S.R.
Colombia	Mexico	Yugoslavia
Denmark	Netherlands	
Finland	New Zealand	

No Member Body opposed the approval of the Draft.

The Draft was submitted simultaneously to the Secretariats of all the ISO Technical Committees. It was approved by the Secretariats of the following Technical Committees concerned with the question of mechanical tests:

ISO/TC 17, *Steel*.

ISO/TC 25, *Cast iron*.

and was disapproved by the Secretariats of the following Technical Committees:

ISO/TC 2, *Bolts, nuts and accessories*.

ISO/TC 26, *Copper and copper alloys*.

ISO/TC 79, *Light Metals and their Alloys*.

ISO/TC 82, *Mining*.

The Draft ISO Recommendation was then, in revised form, submitted by correspondence to the ISO Council, which decided, in December 1964, to accept it as an ISO RECOMMENDATION.

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TABLES OF VICKERS HARDNESS VALUES (HV) FOR METALLIC MATERIALS

This ISO Recommendation contains

1. Tables of Vickers hardness values (HV) for use in tests made on flat surfaces pages 5 to 33
2. Tables of correction factors for use in tests made on spherical surfaces page 34
3. Tables of correction factors for use in tests made on cylindrical surfaces pages 35 to 36

1. TABLES OF VICKERS HARDNESS VALUES (HV) FOR USE IN TESTS MADE ON FLAT SURFACES

The following tables, for loads of 1, 2.5, 3, 5, 10, 20, 30, 50 and 100 kgf have been calculated from the formula below:

$$\text{Vickers hardness (HV)} = \frac{2F \sin \frac{136^\circ}{2}}{d^2}$$

where F = applied load,

d = mean diagonal,

136° = angle of the vertex, between two opposite faces of the indenter,

without regard to the limitations imposed by practical conditions.

In industrial tests carried out in accordance with this ISO Recommendation, using testing machines in good order, the principal limitation will arise in the measurement of the diagonals of the indentation, and it is unlikely that the accuracy of determination of the mean diagonal will be better than ± 0.001 mm. The corresponding accuracy in the resulting hardness value may be obtained from the graph reproduced at the end of the tables (Figure, page 31) which shows the change of hardness value equivalent to a change of 0.001 mm in the length of the mean diagonal for various loads at different levels of hardness.

NOTES

1. The tables are calculated on the basis of $k = 1.8543678$ where $k = 2 \sin 68^\circ$.
2. For workshop conditions, it is recommended that Vickers hardness values above 100 HV should be rounded off to round numbers and that all values below 100 HV should be taken to the first decimal place. The accurate values shown in these tables are essential for testing the hardness of blocks for calibrating Vickers hardness testing machines.

TABLE 1

Load = 1 kgf

Mean diagonal of indentation	Change in length of mean diagonal									
	0.000	+ 0.001 mm	+ 0.002 mm	+ 0.003 mm	+ 0.004 mm	+ 0.005 mm	+ 0.006 mm	+ 0.007 mm	+ 0.008 mm	+ 0.009 mm
0.03	2060	1930	1811	1703	1604	1514	1431	1355	1284	1219
0.04	1159	1103	1051	1003	958	916	876	839	805	772
0.05	742	713	686	660	636	613	591	571	551	533
0.06	515	498	482	467	453	439	426	413	401	389
0.07	378	368	358	348	339	330	321	313	305	297
0.08	290	283	276	269	263	257	251	245	239	234
0.09	229	224	219	214	210	205	201	197	193	189
0.10	185	182	178	175	171	168	165	162	159	156
0.11	153	151	148	145	143	140	138	135	133	131
0.12	129	127	125	123	121	119	117	115	113	111
0.13	110	108	106	105	103	102	100	98.8	97.4	96.0
0.14	94.6	93.3	92.0	90.7	89.4	88.2	87.0	85.8	84.7	83.5
0.15	82.4	81.3	80.3	79.2	78.2	77.2	76.2	75.2	74.3	73.4
0.16	72.4	71.5	70.7	69.8	68.9	68.1	67.3	66.5	65.7	64.9
0.17	64.2	63.4	62.7	62.0	61.2	60.6	59.9	59.2	58.5	57.9
0.18	57.2	56.6	56.0	55.4	54.8	54.2	53.6	53.0	52.5	51.9
0.19	51.4	50.8	50.3	49.8	49.3	48.8	48.3	47.8	47.3	46.8
0.20	46.4	45.9	45.4	45.0	44.6	44.1	43.7	43.3	42.9	42.5
0.21	42.0	41.7	41.3	40.9	40.5	40.1	39.7	39.4	39.0	38.7
0.22	38.3	38.0	37.6	37.3	37.0	36.6	36.3	36.0	35.7	35.4
0.23	35.1	34.8	34.5	34.2	33.9	33.6	33.3	33.0	32.7	32.5
0.24	32.2	31.9	31.7	31.4	31.1	30.9	30.6	30.4	30.2	29.9
0.25	29.7	29.4	29.2	29.0	28.7	28.5	28.3	28.1	27.9	27.6
0.26	27.4	27.2	27.0	26.8	26.6	26.4	26.2	26.0	25.8	25.6
0.27	25.4	25.2	25.1	24.9	24.7	24.5	24.3	24.2	24.0	23.8
0.28	23.7	23.5	23.3	23.2	23.0	22.8	22.7	22.5	22.4	22.2
0.29	22.0	21.9	21.7	21.6	21.5	21.3	21.2	21.0	20.9	20.7
0.30	20.6	20.5	20.3	20.2	20.1	19.9	19.8	19.7	19.5	19.4
0.31	19.3	19.2	19.0	18.9	18.8	18.7	18.6	18.5	18.3	18.2
0.32	18.1	18.0	17.9	17.8	17.7	17.6	17.4	17.3	17.2	17.1
0.33	17.0	16.9	16.8	16.7	16.6	16.5	16.4	16.3	16.2	16.1
0.34	16.04	15.95	15.85	15.76	15.67	15.58	15.49	15.40	15.31	15.22
0.35	15.14	15.05	14.97	14.88	14.80	14.71	14.63	14.55	14.47	14.39
0.36	14.31	14.23	14.15	14.07	14.00	13.92	13.84	13.77	13.69	13.62
0.37	13.55	13.47	13.40	13.33	13.26	13.19	13.12	13.05	12.98	12.91
0.38	12.84	12.77	12.71	12.64	12.58	12.51	12.45	12.38	12.32	12.25
0.39	12.19	12.13	12.07	12.01	11.95	11.89	11.83	11.77	11.71	11.65
0.40	11.59	11.53	11.47	11.42	11.36	11.31	11.25	11.19	11.14	11.09
0.41	11.03	10.98	10.92	10.87	10.82	10.77	10.72	10.66	10.61	10.56
0.42	10.51	10.46	10.41	10.36	10.31	10.27	10.22	10.17	10.12	10.08
0.43	10.03	9.98	9.94	9.89	9.85	9.80	9.75	9.71	9.67	9.62
0.44	9.58	9.53	9.49	9.45	9.41	9.36	9.32	9.28	9.24	9.20
0.45	9.16	9.12	9.08	9.04	9.00	8.96	8.92	8.88	8.84	8.80
0.46	8.76	8.73	8.69	8.65	8.61	8.58	8.54	8.50	8.47	8.43
0.47	8.39	8.36	8.32	8.29	8.25	8.22	8.18	8.15	8.12	8.08
0.48	8.05	8.02	7.98	7.95	7.92	7.88	7.85	7.82	7.79	7.75
0.49	7.72	7.69	7.66	7.63	7.60	7.57	7.54	7.51	7.48	7.45
0.50	7.42	7.39	7.36	7.33	7.30	7.27	7.24	7.21	7.19	7.16
0.51	7.13	7.10	7.07	7.05	7.02	6.99	6.96	6.94	6.91	6.88
0.52	6.86	6.83	6.81	6.78	6.75	6.73	6.70	6.68	6.65	6.63
0.53	6.60	6.58	6.55	6.53	6.50	6.48	6.45	6.43	6.41	6.38
0.54	6.36	6.34	6.31	6.29	6.27	6.24	6.22	6.20	6.17	6.15
0.55	6.13	6.11	6.09	6.06	6.04	6.02	6.00	5.98	5.96	5.93
0.56	5.91	5.89	5.87	5.85	5.83	5.81	5.79	5.77	5.75	5.73
0.57	5.71	5.69	5.67	5.65	5.63	5.61	5.59	5.57	5.55	5.53
0.58	5.51	5.49	5.47	5.46	5.44	5.42	5.40	5.38	5.36	5.35
0.59	5.33	5.31	5.29	5.27	5.26	5.24	5.22	5.20	5.19	5.17
0.60	5.15	5.13	5.12	5.10	5.08	5.07	5.05	5.03	5.02	5.00

TABLE 2

Load 2.5 kgf

Mean diagonal of indentation	Change in length of mean diagonal									
mm	0.000	+ 0.001 mm	+ 0.002 mm	+ 0.003 mm	+ 0.004 mm	+ 0.005 mm	+ 0.006 mm	+ 0.007 mm	+ 0.008 mm	+ 0.009 mm
0.04	2897	2758	2628	2507	2395	2289	2191	2099	2012	1931
0.05	1854	1782	1714	1650	1590	1533	1478	1427	1378	1332
0.06	1288	1246	1206	1168	1132	1097	1064	1033	1003	974
0.07	946	920	894	870	847	824	803	782	762	743
0.08	724	707	689	673	657	642	627	612	599	585
0.09	572	560	548	536	525	514	503	493	483	473
0.10	464	454	446	437	429	420	413	405	397	390
0.11	383	376	370	363	357	351	345	339	333	327
0.12	322	317	311	306	302	297	292	287	283	279
0.13	274	270	266	262	258	254	251	247	243	240
0.14	237	233	230	227	224	220	217	215	212	209
0.15	206	203	201	198	195	193	190	188	186	183
0.16	181	179	177	174	172	170	168	166	164	162
0.17	160	159	157	155	153	151	150	148	146	145
0.18	143	142	140	138	137	135	134	133	131	130
0.19	128	127	126	124	123	122	121	119	118	117
0.20	116	115	114	112	111	110	109	108	107	106
0.21	105	104	103	102	101	100	99.4	98.5	97.5	96.7
0.22	95.8	94.9	94.1	93.2	92.4	91.6	90.8	90.0	89.2	88.4
0.23	87.6	86.9	86.1	85.4	84.7	83.9	83.2	82.5	81.8	81.2
0.24	80.5	79.8	79.2	78.5	77.9	77.2	76.6	76.0	75.4	74.8
0.25	74.2	73.6	73.0	72.4	71.9	71.3	70.7	70.2	69.6	69.1
0.26	68.6	68.1	67.5	67.0	66.5	66.0	65.5	65.0	64.5	64.1
0.27	63.6	63.1	62.7	62.2	61.7	61.3	60.9	60.4	60.0	59.6
0.28	59.1	58.7	58.3	57.9	57.5	57.1	56.7	56.3	55.9	55.5
0.29	55.1	54.7	54.4	54.0	53.6	53.3	52.9	52.6	52.2	51.9
0.30	51.5	51.2	50.8	50.5	50.2	49.8	49.5	49.2	48.9	48.6
0.31	48.2	47.9	47.6	47.3	47.0	46.7	46.4	46.1	45.8	45.6
0.32	45.3	45.0	44.7	44.4	44.2	43.9	43.6	43.4	43.1	42.8
0.33	42.6	42.3	42.1	41.8	41.6	41.3	41.1	40.8	40.6	40.3
0.34	40.1	39.9	39.6	39.4	39.2	38.9	38.7	38.5	38.3	38.1
0.35	37.8	37.6	37.4	37.2	37.0	36.8	36.6	36.4	36.2	36.0
0.36	35.8	35.6	35.4	35.2	35.0	34.8	34.6	34.4	34.2	34.0
0.37	33.9	33.7	33.5	33.3	33.1	33.0	32.8	32.6	32.4	32.3
0.38	32.1	31.9	31.8	31.6	31.4	31.3	31.1	31.0	30.8	30.6
0.39	30.5	30.3	30.2	30.0	29.9	29.7	29.6	29.4	29.3	29.1
0.40	29.0	28.8	28.7	28.5	28.4	28.3	28.1	28.0	27.8	27.7
0.41	27.6	27.4	27.3	27.2	27.0	26.9	26.8	26.7	26.5	26.4
0.42	26.3	26.2	26.0	25.9	25.8	25.7	25.5	25.4	25.3	25.2
0.43	25.1	25.0	24.8	24.7	24.6	24.5	24.4	24.3	24.2	24.1
0.44	23.9	23.8	23.7	23.6	23.5	23.4	23.3	23.2	23.1	23.0
0.45	22.9	22.8	22.7	22.6	22.5	22.4	22.3	22.2	22.1	22.0
0.46	21.9	21.8	21.7	21.6	21.5	21.4	21.35	21.26	21.17	21.08
0.47	20.99	20.90	20.81	20.72	20.63	20.55	20.46	20.38	20.29	20.21
0.48	20.12	20.04	19.95	19.87	19.79	19.71	19.63	19.55	19.47	19.39
0.49	19.31	19.23	19.15	19.07	19.00	18.92	18.84	18.77	18.69	18.62
0.50	18.54	18.47	18.40	18.32	18.25	18.18	18.11	18.04	17.96	17.89
0.51	17.82	17.75	17.68	17.62	17.55	17.48	17.41	17.34	17.28	17.21
0.52	17.14	17.08	17.01	16.95	16.88	16.82	16.76	16.69	16.63	16.57
0.53	16.50	16.44	16.38	16.32	16.26	16.20	16.14	16.08	16.02	15.96
0.54	15.90	15.84	15.78	15.72	15.67	15.61	15.55	15.49	15.44	15.38
0.55	15.33	15.27	15.21	15.16	15.10	15.05	15.00	14.94	14.89	14.84
0.56	14.78	14.73	14.68	14.63	14.57	14.52	14.47	14.42	14.37	14.32
0.57	14.27	14.22	14.17	14.12	14.07	14.02	13.97	13.92	13.88	13.83

TABLE 2 (concluded)

Load 2.5 kgf

Mean diagonal of indentation	Change in length of mean diagonal									
mm	0.000	+ 0.001 mm	+ 0.002 mm	+ 0.003 mm	+ 0.004 mm	+ 0.005 mm	+ 0.006 mm	+ 0.007 mm	+ 0.008 mm	+ 0.009 mm
0.58	13.78	13.73	13.69	13.64	13.59	13.55	13.50	13.45	13.41	13.36
0.59	13.32	13.27	13.23	13.18	13.14	13.09	13.05	13.01	12.96	12.92
0.60	12.88	12.83	12.79	12.75	12.71	12.67	12.62	12.58	12.54	12.50
0.61	12.46	12.42	12.38	12.34	12.30	12.26	12.22	12.18	12.14	12.10
0.62	12.06	12.02	11.98	11.94	11.91	11.87	11.83	11.79	11.75	11.72
0.63	11.68	11.64	11.61	11.57	11.53	11.50	11.46	11.43	11.39	11.35
0.64	11.32	11.28	11.25	11.21	11.18	11.14	11.11	11.07	11.04	11.01
0.65	10.97	10.94	10.91	10.87	10.84	10.81	10.77	10.74	10.71	10.67
0.66	10.64	10.61	10.58	10.55	10.51	10.48	10.45	10.42	10.39	10.36
0.67	10.33	10.30	10.27	10.24	10.21	10.17	10.14	10.11	10.09	10.06
0.68	10.03	10.00	9.97	9.94	9.91	9.88	9.85	9.82	9.79	9.77
0.69	9.74	9.71	9.68	9.65	9.63	9.60	9.57	9.54	9.52	9.49
0.70	9.46	9.43	9.41	9.38	9.35	9.33	9.30	9.27	9.25	9.22
0.71	9.20	9.17	9.14	9.12	9.09	9.07	9.04	9.02	8.99	8.97
0.72	8.94	8.92	8.89	8.87	8.84	8.82	8.80	8.77	8.75	8.72
0.73	8.70	8.68	8.65	8.63	8.60	8.58	8.56	8.53	8.51	8.49
0.74	8.47	8.44	8.42	8.40	8.38	8.35	8.33	8.31	8.29	8.26
0.75	8.24	8.22	8.20	8.18	8.15	8.13	8.11	8.09	8.07	8.05
0.76	8.03	8.01	7.98	7.96	7.94	7.92	7.90	7.88	7.86	7.84
0.77	7.82	7.80	7.78	7.76	7.74	7.72	7.70	7.68	7.66	7.64
0.78	7.62	7.60	7.58	7.56	7.54	7.52	7.50	7.48	7.47	7.45
0.79	7.43	7.41	7.39	7.37	7.35	7.34	7.32	7.30	7.28	7.26
0.80	7.24	7.23	7.21	7.19	7.17	7.15	7.14	7.12	7.10	7.08
0.81	7.07	7.05	7.03	7.01	7.00	6.98	6.96	6.95	6.93	6.91
0.82	6.89	6.88	6.86	6.84	6.83	6.81	6.79	6.78	6.76	6.75
0.83	6.73	6.71	6.70	6.68	6.67	6.65	6.63	6.62	6.60	6.59
0.84	6.57	6.55	6.54	6.52	6.51	6.49	6.48	6.46	6.45	6.43
0.85	6.42	6.40	6.39	6.37	6.36	6.34	6.33	6.31	6.30	6.28
0.86	6.27	6.25	6.24	6.22	6.21	6.20	6.18	6.17	6.15	6.14
0.87	6.12	6.11	6.10	6.08	6.07	6.06	6.04	6.03	6.01	6.00
0.88	5.99	5.97	5.96	5.95	5.93	5.92	5.91	5.89	5.88	5.87
0.89	5.85	5.84	5.83	5.81	5.80	5.79	5.77	5.76	5.75	5.74
0.90	5.72	5.71	5.70	5.69	5.67	5.66	5.65	5.64	5.62	5.61
0.91	5.60	5.59	5.57	5.56	5.55	5.54	5.53	5.51	5.50	5.49
0.92	5.48	5.47	5.45	5.44	5.43	5.42	5.41	5.39	5.38	5.37
0.93	5.36	5.35	5.34	5.33	5.31	5.30	5.29	5.28	5.27	5.26
0.94	5.25	5.24	5.22	5.21	5.20	5.19	5.18	5.17	5.16	5.15
0.95	5.14	5.13	5.12	5.10	5.09	5.08	5.07	5.06	5.05	5.04
0.96	5.03	5.02	5.01	5.00	4.99	4.98	4.97	4.96	4.95	4.94

TABLE 3

Load 3 kgf

Mean diagonal of indentation	Change in length of mean diagonal									
	mm	0.000	+ 0.001 mm	+ 0.002 mm	+ 0.003 mm	+ 0.004 mm	+ 0.005 mm	+ 0.006 mm	+ 0.007 mm	+ 0.008 mm
0.05	2225	2139	2057	1980	1908	1839	1774	1712	1654	1598
0.06	1545	1495	1447	1402	1358	1317	1277	1239	1203	1168
0.07	1135	1104	1073	1044	1016	989	963	938	914	891
0.08	869	848	827	808	788	770	752	735	718	702
0.09	687	672	657	643	630	616	604	591	579	568
0.10	556	545	535	524	514	505	495	486	477	468
0.11	460	452	443	436	428	421	413	406	400	393
0.12	386	380	374	368	362	356	350	345	340	334
0.13	329	324	319	314	310	305	301	296	292	288
0.14	284	280	276	272	268	265	261	257	254	251
0.15	247	244	241	238	235	232	229	226	223	220
0.16	217	215	212	209	207	204	202	199	197	195
0.17	192	190	188	186	184	182	180	178	176	174
0.18	172	170	168	166	164	163	161	159	157	156
0.19	154	152	151	149	148	146	145	143	142	140
0.20	139	138	136	135	134	132	131	130	129	127
0.21	126	125	124	123	121	120	119	118	117	116
0.22	115	114	113	112	111	110	109	108	107	106
0.23	105	104	103	102	101.6	100.7	99.9	99.0	98.2	97.4
0.24	96.6	95.8	95.0	94.2	93.4	92.7	91.9	91.2	90.5	89.7
0.25	89.0	88.3	87.6	86.9	86.2	85.6	84.9	84.2	83.6	82.9
0.26	82.3	81.7	81.0	80.4	79.8	79.2	78.6	78.0	77.5	76.9
0.27	76.3	75.7	75.2	74.6	74.1	73.6	73.0	72.5	72.0	71.5
0.28	71.0	70.5	70.0	69.5	69.0	68.5	68.0	67.5	67.1	66.6
0.29	66.1	65.7	65.2	64.8	64.4	63.9	63.5	63.1	62.6	62.2
0.30	61.8	61.4	61.0	60.6	60.2	59.8	59.4	59.0	58.6	58.3
0.31	57.9	57.5	57.1	56.8	56.4	56.1	55.7	55.4	55.0	54.7
0.32	54.3	54.0	53.7	53.3	53.0	52.7	52.3	52.0	51.7	51.4
0.33	51.1	50.8	50.5	50.2	49.9	49.6	49.3	49.0	48.7	48.4
0.34	48.1	47.8	47.6	47.3	47.0	46.7	46.5	46.2	45.9	45.7
0.35	45.4	45.2	44.9	44.6	44.4	44.1	43.9	43.6	43.4	43.2
0.36	42.9	42.7	42.5	42.2	42.0	41.8	41.5	41.3	41.1	40.9
0.37	40.6	40.4	40.2	40.0	39.8	39.6	39.3	39.1	38.9	38.7
0.38	38.5	38.3	38.1	37.9	37.7	37.5	37.3	37.1	37.0	36.8
0.39	36.6	36.4	36.2	36.0	35.8	35.7	35.5	35.3	35.1	34.9
0.40	34.8	34.6	34.4	34.3	34.1	33.9	33.7	33.6	33.4	33.3
0.41	33.1	32.9	32.8	32.6	32.5	32.3	32.1	32.0	31.8	31.7
0.42	31.5	31.4	31.2	31.1	30.9	30.8	30.7	30.5	30.4	30.2
0.43	30.1	29.9	29.8	29.7	29.5	29.4	29.3	29.1	29.0	28.9
0.44	28.7	28.6	28.5	28.3	28.2	28.1	28.0	27.8	27.7	27.6
0.45	27.5	27.4	27.2	27.1	27.0	26.9	26.8	26.6	26.5	26.4
0.46	26.3	26.2	26.1	26.0	25.8	25.7	25.6	25.5	25.4	25.3
0.47	25.2	25.1	25.0	24.9	24.8	24.7	24.6	24.5	24.3	24.2
0.48	24.1	24.0	23.9	23.8	23.75	23.65	23.55	23.46	23.36	23.26
0.49	23.17	23.08	22.98	22.89	22.80	22.70	22.61	22.52	22.43	22.34
0.50	22.25	22.16	22.08	21.99	21.90	21.81	21.73	21.64	21.56	21.47
0.51	21.39	21.30	21.22	21.14	21.06	20.98	20.89	20.81	20.73	20.65
0.52	20.57	20.49	20.42	20.34	20.26	20.18	20.11	20.03	19.95	19.88
0.53	19.80	19.73	19.66	19.58	19.51	19.44	19.36	19.29	19.22	19.15
0.54	19.08	19.01	18.94	18.87	18.80	18.73	18.66	18.59	18.52	18.46
0.55	18.39	18.32	18.26	18.19	18.13	18.06	18.00	17.93	17.87	17.80
0.56	17.74	17.68	17.61	17.55	17.49	17.43	17.37	17.30	17.24	17.18
0.57	17.12	17.06	17.00	16.94	16.88	16.83	16.77	16.71	16.65	16.59
0.58	16.54	16.48	16.42	16.37	16.31	16.26	16.20	16.15	16.09	16.04

TABLE 3 (concluded)

Load 3 kgf

Mean diagonal of indentation	Change in length of mean diagonal									
mm	0.000	+ 0.001 mm	+ 0.002 mm	+ 0.003 mm	+ 0.004 mm	+ 0.005 mm	+ 0.006 mm	+ 0.007 mm	+ 0.008 mm	+ 0.009 mm
0.59	15.98	15.93	15.87	15.82	15.77	15.71	15.66	15.61	15.56	15.50
0.60	15.45	15.40	15.35	15.30	15.25	15.20	15.15	15.10	15.05	15.00
0.61	14.95	14.90	14.85	14.80	14.76	14.71	14.66	14.61	14.57	14.52
0.62	14.47	14.43	14.38	14.33	14.29	14.24	14.20	14.15	14.11	14.06
0.63	14.02	13.97	13.93	13.88	13.84	13.80	13.75	13.71	13.67	13.62
0.64	13.58	13.54	13.50	13.46	13.41	13.37	13.33	13.29	13.25	13.21
0.65	13.17	13.13	13.09	13.05	13.01	12.97	12.93	12.89	12.85	12.81
0.66	12.77	12.73	12.69	12.66	12.62	12.58	12.54	12.50	12.47	12.43
0.67	12.39	12.36	12.32	12.28	12.25	12.21	12.17	12.14	12.10	12.07
0.68	12.03	12.00	11.96	11.93	11.89	11.86	11.82	11.79	11.75	11.72
0.69	11.68	11.65	11.62	11.58	11.55	11.52	11.48	11.45	11.42	11.39
0.70	11.35	11.32	11.29	11.26	11.22	11.19	11.16	11.13	11.10	11.07
0.71	11.04	11.00	10.97	10.94	10.91	10.88	10.85	10.82	10.79	10.76
0.72	10.73	10.70	10.67	10.64	10.61	10.58	10.55	10.53	10.50	10.47
0.73	10.44	10.41	10.38	10.35	10.33	10.30	10.27	10.24	10.21	10.19
0.74	10.16	10.13	10.10	10.08	10.05	10.02	10.00	9.97	9.94	9.92
0.75	9.89	9.86	9.84	9.81	9.79	9.76	9.73	9.71	9.68	9.66
0.76	9.63	9.61	9.58	9.56	9.53	9.51	9.48	9.46	9.43	9.41
0.77	9.38	9.36	9.33	9.31	9.29	9.26	9.24	9.21	9.19	9.17
0.78	9.14	9.12	9.10	9.07	9.05	9.03	9.00	8.98	8.96	8.94
0.79	8.91	8.89	8.87	8.85	8.82	8.80	8.78	8.76	8.74	8.71
0.80	8.69	8.67	8.65	8.63	8.61	8.58	8.56	8.54	8.52	8.50
0.81	8.48	8.46	8.44	8.42	8.40	8.38	8.35	8.33	8.31	8.29
0.82	8.27	8.25	8.23	8.21	8.19	8.17	8.15	8.13	8.11	8.09
0.83	8.08	8.06	8.04	8.02	8.00	7.98	7.96	7.94	7.92	7.90
0.84	7.88	7.87	7.85	7.83	7.81	7.79	7.77	7.75	7.74	7.72
0.85	7.70	7.68	7.66	7.65	7.63	7.61	7.59	7.57	7.56	7.54
0.86	7.52	7.50	7.49	7.47	7.45	7.44	7.42	7.40	7.38	7.37
0.87	7.35	7.33	7.32	7.30	7.28	7.27	7.25	7.23	7.22	7.20
0.88	7.18	7.17	7.15	7.14	7.12	7.10	7.09	7.07	7.05	7.04
0.89	7.02	7.01	6.99	6.98	6.96	6.94	6.93	6.91	6.90	6.88
0.90	6.87	6.85	6.84	6.82	6.81	6.79	6.78	6.76	6.75	6.73
0.91	6.72	6.70	6.69	6.67	6.66	6.64	6.63	6.62	6.60	6.59
0.92	6.57	6.56	6.54	6.53	6.52	6.50	6.49	6.47	6.46	6.45
0.93	6.43	6.42	6.40	6.39	6.38	6.36	6.35	6.34	6.32	6.31
0.94	6.30	6.28	6.27	6.26	6.24	6.23	6.22	6.20	6.19	6.18
0.95	6.16	6.15	6.14	6.13	6.11	6.10	6.09	6.07	6.06	6.05
0.96	6.04	6.02	6.01	6.00	5.99	5.97	5.96	5.95	5.94	5.92
0.97	5.91	5.90	5.89	5.88	5.86	5.85	5.84	5.83	5.82	5.80
0.98	5.79	5.78	5.77	5.76	5.75	5.73	5.72	5.71	5.70	5.69
0.99	5.68	5.66	5.65	5.64	5.63	5.62	5.61	5.60	5.59	5.57
1.00	5.56	5.55	5.54	5.53	5.52	5.51	5.50	5.49	5.48	5.46
1.01	5.45	5.44	5.43	5.42	5.41	5.40	5.39	5.38	5.37	5.36
1.02	5.35	5.34	5.33	5.32	5.31	5.30	5.28	5.27	5.26	5.25
1.03	5.24	5.23	5.22	5.21	5.20	5.19	5.18	5.17	5.16	5.15
1.04	5.14	5.13	5.12	5.11	5.10	5.09	5.08	5.07	5.07	5.06
1.05	5.05	5.04	5.03	5.02	5.01	5.00	4.99	4.98	4.97	4.96

TABLE 4

Load 5 kgf

Mean diagonal of indentation	Change in length of mean diagonal									
mm	0.000	+ 0.001 mm	+ 0.002 mm	+ 0.003 mm	+ 0.004 mm	+ 0.005 mm	+ 0.006 mm	+ 0.007 mm	+ 0.008 mm	+ 0.009 mm
0.06	2576	2492	2412	2336	2264	2195	2129	2065	2005	1947
0.07	1892	1839	1789	1740	1693	1648	1605	1564	1524	1486
0.08	1449	1413	1379	1346	1314	1283	1254	1225	1197	1171
0.09	1145	1120	1095	1072	1049	1027	1006	985	965	946
0.10	927	909	891	874	857	841	825	810	795	780
0.11	766	753	739	726	713	701	689	677	666	655
0.12	644	633	623	613	603	593	584	575	566	557
0.13	549	540	532	524	516	509	501	494	487	480
0.14	473	466	460	453	447	441	435	429	423	418
0.15	412	407	401	396	391	386	381	376	371	367
0.16	362	358	353	349	345	341	336	332	329	325
0.17	321	317	313	310	306	303	299	296	293	289
0.18	286	283	280	277	274	271	268	265	262	260
0.19	257	254	252	249	246	244	241	239	237	234
0.20	232	229	227	225	223	221	218	216	214	212
0.21	210	208	206	204	202	201	199	197	195	193
0.22	192	190	188	186	185	183	182	180	178	177
0.23	175	174	172	171	169	168	166	165	164	162
0.24	161	160	158	157	156	154	153	152	151	150
0.25	148	147	146	145	144	143	141	140	139	138
0.26	137	136	135	134	133	132	131	130	129	128
0.27	127	126	125	124	123.5	122.6	121.7	120.8	120.0	119.1
0.28	118.3	117.4	116.6	115.8	115.0	114.2	113.4	112.6	111.8	111.0
0.29	110.2	109.5	108.7	108.0	107.3	106.5	105.8	105.1	104.4	103.7
0.30	103.0	102.3	101.7	101.0	100.3	99.7	99.0	98.4	97.7	97.1
0.31	96.5	95.9	95.2	94.6	94.0	93.4	92.9	92.3	91.7	91.1
0.32	90.5	90.0	89.4	88.9	88.3	87.8	87.2	86.7	86.2	85.7
0.33	85.1	84.6	84.1	83.6	83.1	82.6	82.1	81.6	81.2	80.7
0.34	80.2	79.7	79.3	78.8	78.4	77.9	77.4	77.0	76.6	76.1
0.35	75.5	75.3	74.8	74.4	74.0	73.6	73.2	72.7	72.3	71.9
0.36	71.5	71.1	70.8	70.4	70.0	69.6	69.2	68.8	68.5	68.1
0.37	67.7	67.4	67.0	66.6	66.3	65.9	65.6	65.2	64.9	64.5
0.38	64.2	63.9	63.5	63.2	62.9	62.6	62.2	61.9	61.6	61.3
0.39	61.0	60.6	60.3	60.0	59.7	59.4	59.1	58.8	58.5	58.2
0.40	57.9	57.7	57.4	57.1	56.8	56.5	56.2	56.0	55.7	55.4
0.41	55.2	54.9	54.6	54.4	54.1	53.8	53.6	53.3	53.1	52.8
0.42	52.6	52.3	52.1	51.8	51.6	51.3	51.1	50.9	50.6	50.4
0.43	50.1	49.9	49.7	49.5	49.2	49.0	48.8	48.6	48.3	48.1
0.44	47.9	47.7	47.5	47.2	47.0	46.8	46.6	46.4	46.2	46.0
0.45	45.8	45.6	45.4	45.2	45.0	44.8	44.6	44.4	44.2	44.0
0.46	43.8	43.6	43.4	43.3	43.1	42.9	42.7	42.5	42.3	42.2
0.47	42.0	41.8	41.6	41.4	41.3	41.1	40.9	40.8	40.6	40.4
0.48	40.2	40.1	39.9	39.7	39.6	39.4	39.3	39.1	38.9	38.8
0.49	38.6	38.5	38.3	38.1	38.0	37.8	37.7	37.5	37.4	37.2
0.50	37.1	36.9	36.8	36.6	36.5	36.4	36.2	36.1	35.9	35.8
0.51	35.6	35.5	35.4	35.2	35.1	35.0	34.8	34.7	34.6	34.4
0.52	34.3	34.2	34.0	33.9	33.8	33.6	33.5	33.4	33.3	33.1
0.53	33.0	32.9	32.8	32.6	32.5	32.4	32.3	32.2	32.0	31.9
0.54	31.8	31.7	31.6	31.4	31.3	31.2	31.1	31.0	30.9	30.8
0.55	30.7	30.5	30.4	30.3	30.2	30.1	30.0	29.9	29.8	29.7
0.56	29.6	29.5	29.4	29.3	29.1	29.0	28.9	28.8	28.7	28.6
0.57	28.5	28.4	28.3	28.2	28.1	28.0	27.9	27.85	27.75	27.66
0.58	27.56	27.47	27.37	27.28	27.19	27.09	27.00	26.91	26.82	26.73
0.59	26.64	26.55	26.46	26.37	26.28	26.19	26.10	26.01	25.93	25.84

Table 4 (continued)

Load 5 kgf

Mean diagonal of indentation	Change in length of mean diagonal									
mm	0.000	+ 0.001 mm	+ 0.002 mm	+ 0.003 mm	+ 0.004 mm	+ 0.005 mm	+ 0.006 mm	+ 0.007 mm	+ 0.008 mm	+ 0.009 mm
0.60	25.76	25.67	25.58	25.50	25.42	25.33	25.25	25.16	25.08	25.00
0.61	24.92	24.84	24.75	24.67	24.59	24.51	24.43	24.36	24.28	24.20
0.62	24.12	24.04	23.97	23.89	23.81	23.74	23.66	23.58	23.51	23.43
0.63	23.36	23.29	23.21	23.14	23.07	22.99	22.92	22.85	22.78	22.71
0.64	22.64	22.57	22.50	22.43	22.36	22.29	22.22	22.15	22.08	22.01
0.65	21.95	21.88	21.81	21.74	21.68	21.61	21.55	21.48	21.41	21.35
0.66	21.29	21.22	21.16	21.09	21.03	20.97	20.90	20.84	20.78	20.72
0.67	20.65	20.59	20.53	20.47	20.41	20.35	20.29	20.23	20.17	20.11
0.68	20.05	19.99	19.93	19.88	19.82	19.76	19.70	19.65	19.59	19.53
0.69	19.47	19.42	19.36	19.31	19.25	19.20	19.14	19.09	19.03	18.98
0.70	18.92	18.87	18.81	18.76	18.71	18.65	18.60	18.55	18.50	18.44
0.71	18.39	18.34	18.29	18.24	18.19	18.14	18.09	18.04	17.99	17.94
0.72	17.89	17.84	17.79	17.74	17.69	17.64	17.59	17.54	17.49	17.45
0.73	17.40	17.35	17.30	17.26	17.21	17.16	17.12	17.07	17.02	16.98
0.74	16.93	16.89	16.84	16.80	16.75	16.71	16.66	16.62	16.57	16.53
0.75	16.48	16.44	16.40	16.35	16.31	16.27	16.22	16.18	16.14	16.09
0.76	16.05	16.01	15.97	15.93	15.88	15.84	15.80	15.76	15.72	15.68
0.77	15.64	15.60	15.56	15.52	15.48	15.44	15.40	15.36	15.32	15.28
0.78	15.24	15.20	15.16	15.12	15.08	15.05	15.01	14.97	14.93	14.89
0.79	14.86	14.82	14.78	14.74	14.71	14.67	14.63	14.60	14.56	14.52
0.80	14.49	14.45	14.42	14.38	14.34	14.31	14.27	14.24	14.20	14.17
0.81	14.13	14.10	14.06	14.03	13.99	13.96	13.92	13.89	13.86	13.82
0.82	13.79	13.76	13.72	13.69	13.66	13.62	13.59	13.56	13.52	13.49
0.83	13.46	13.43	13.39	13.36	13.33	13.30	13.27	13.23	13.20	13.17
0.84	13.14	13.11	13.08	13.05	13.02	12.99	12.95	12.92	12.89	12.86
0.85	12.83	12.80	12.77	12.74	12.71	12.68	12.65	12.62	12.59	12.57
0.86	12.54	12.51	12.48	12.45	12.42	12.39	12.36	12.33	12.31	12.28
0.87	12.25	12.22	12.19	12.17	12.14	12.11	12.08	12.05	12.03	12.00
0.88	11.97	11.95	11.92	11.89	11.86	11.84	11.81	11.78	11.76	11.73
0.89	11.71	11.68	11.65	11.63	11.60	11.57	11.55	11.52	11.50	11.47
0.90	11.45	11.42	11.40	11.37	11.35	11.32	11.30	11.27	11.25	11.22
0.91	11.20	11.17	11.15	11.12	11.10	11.07	11.05	11.03	11.00	10.98
0.92	10.95	10.93	10.91	10.88	10.86	10.84	10.81	10.79	10.77	10.74
0.93	10.72	10.70	10.67	10.65	10.63	10.61	10.58	10.56	10.54	10.52
0.94	10.49	10.47	10.45	10.43	10.40	10.38	10.36	10.34	10.32	10.30
0.95	10.27	10.25	10.23	10.21	10.19	10.17	10.14	10.12	10.10	10.08
0.96	10.06	10.04	10.02	10.00	9.98	9.96	9.94	9.92	9.89	9.87
0.97	9.85	9.83	9.81	9.79	9.77	9.75	9.73	9.71	9.69	9.67
0.98	9.65	9.63	9.61	9.60	9.58	9.56	9.54	9.52	9.50	9.48
0.99	9.46	9.44	9.42	9.40	9.38	9.37	9.35	9.33	9.31	9.29
1.00	9.27	9.25	9.23	9.22	9.20	9.18	9.16	9.14	9.13	9.11
1.01	9.09	9.07	9.05	9.04	9.02	9.00	8.98	8.96	8.95	8.93
1.02	8.91	8.89	8.88	8.86	8.84	8.83	8.81	8.79	8.77	8.76
1.03	8.74	8.72	8.71	8.69	8.67	8.66	8.64	8.62	8.61	8.59
1.04	8.57	8.56	8.54	8.52	8.51	8.49	8.47	8.46	8.44	8.43
1.05	8.41	8.39	8.38	8.36	8.35	8.33	8.31	8.30	8.28	8.27
1.06	8.25	8.24	8.22	8.21	8.19	8.17	8.16	8.14	8.13	8.11
1.07	8.10	8.08	8.07	8.05	8.04	8.02	8.01	7.99	7.98	7.96
1.08	7.95	7.93	7.92	7.91	7.89	7.88	7.86	7.85	7.83	7.82
1.09	7.80	7.79	7.78	7.76	7.75	7.73	7.72	7.70	7.69	7.68
1.10	7.66	7.65	7.63	7.62	7.61	7.59	7.58	7.57	7.55	7.54
1.11	7.53	7.51	7.50	7.48	7.47	7.46	7.44	7.43	7.42	7.40
1.12	7.39	7.38	7.37	7.35	7.34	7.33	7.31	7.30	7.29	7.27
1.13	7.26	7.25	7.24	7.22	7.21	7.20	7.18	7.17	7.16	7.15

TABLE 4 (concluded)

Load 5 kgf

Mean diagonal of indentation	Change in length of mean diagonal									
	0.000	+ 0.001 mm	+ 0.002 mm	+ 0.003 mm	+ 0.004 mm	+ 0.005 mm	+ 0.006 mm	+ 0.007 mm	+ 0.008 mm	+ 0.009 mm
1.14	7.13	7.12	7.11	7.10	7.08	7.07	7.06	7.05	7.04	7.02
1.15	7.01	7.00	6.99	6.97	6.96	6.95	6.94	6.93	6.91	6.90
1.16	6.89	6.88	6.87	6.85	6.84	6.83	6.82	6.81	6.80	6.78
1.17	6.77	6.76	6.75	6.74	6.73	6.72	6.70	6.69	6.68	6.67
1.18	6.66	6.65	6.64	6.63	6.61	6.60	6.59	6.58	6.57	6.56
1.19	6.55	6.54	6.53	6.51	6.50	6.49	6.48	6.47	6.46	6.45
1.20	6.44	6.43	6.42	6.41	6.40	6.39	6.37	6.36	6.35	6.34
1.21	6.33	6.32	6.31	6.30	6.29	6.28	6.27	6.26	6.25	6.24
1.22	6.23	6.22	6.21	6.20	6.19	6.18	6.17	6.16	6.15	6.14
1.23	6.13	6.12	6.11	6.10	6.09	6.08	6.07	6.06	6.05	6.04
1.24	6.03	6.02	6.01	6.00	5.99	5.98	5.97	5.96	5.95	5.94
1.25	5.93	5.92	5.92	5.91	5.90	5.89	5.88	5.87	5.86	5.85
1.26	5.84	5.83	5.82	5.81	5.80	5.79	5.78	5.78	5.77	5.76
1.27	5.75	5.74	5.73	5.72	5.71	5.70	5.69	5.69	5.68	5.67
1.28	5.66	5.65	5.64	5.63	5.62	5.62	5.61	5.60	5.59	5.58
1.29	5.57	5.56	5.55	5.55	5.54	5.53	5.52	5.51	5.50	5.49
1.30	5.49	5.48	5.47	5.46	5.45	5.44	5.44	5.43	5.42	5.41
1.31	5.40	5.39	5.39	5.38	5.37	5.36	5.35	5.35	5.34	5.33
1.32	5.32	5.31	5.31	5.30	5.29	5.28	5.27	5.27	5.26	5.25
1.33	5.24	5.23	5.23	5.22	5.21	5.20	5.19	5.19	5.18	5.17
1.34	5.16	5.16	5.15	5.14	5.13	5.13	5.12	5.11	5.10	5.09
1.35	5.09	5.08	5.07	5.06	5.06	5.05	5.04	5.04	5.03	5.02
1.36	5.01	5.01	5.00	4.99	4.98	4.98	4.97	4.96	4.95	4.95

TABLE 5

Load 10 kgf

Mean diagonal of indentation	Change in length of mean diagonal									
mm	0.000	+ 0.001 mm	+ 0.002 mm	+ 0.003 mm	+ 0.004 mm	+ 0.005 mm	+ 0.006 mm	+ 0.007 mm	+ 0.008 mm	+ 0.009 mm
0.09	2289	2239	2191	2144	2099	2055	2012	1971	1931	1892
0.10	1854	1818	1782	1748	1714	1682	1650	1620	1590	1561
0.11	1533	1505	1478	1452	1427	1402	1378	1355	1332	1309
0.12	1288	1267	1246	1226	1206	1187	1168	1150	1132	1114
0.13	1097	1081	1064	1048	1033	1017	1003	988	974	960
0.14	946	933	920	907	894	882	870	858	847	835
0.15	824	813	803	792	782	772	762	752	743	734
0.16	724	715	707	698	689	681	673	665	657	649
0.17	642	634	627	620	612	606	599	592	585	579
0.18	572	566	560	554	548	542	536	530	525	519
0.19	514	508	503	498	493	488	483	478	473	468
0.20	464	459	454	450	446	441	437	433	429	425
0.21	420	417	413	409	405	401	397	394	390	387
0.22	383	380	376	373	370	366	363	360	357	354
0.23	351	348	345	342	339	336	333	330	327	325
0.24	322	319	317	314	311	309	306	304	302	299
0.25	297	294	292	290	287	285	283	281	279	276
0.26	274	272	270	268	266	264	262	260	258	256
0.27	254	252	251	249	247	245	243	242	240	238
0.28	237	235	233	232	230	228	227	225	224	222
0.29	220	219	217	216	215	213	212	210	209	207
0.30	206	205	203	202	201	199	198	197	195	194
0.31	193	192	190	189	188	187	186	185	183	182
0.32	181	180	179	178	177	176	174	173	172	171
0.33	170	169	168	167	166	165	164	163	162	161
0.34	160.4	159.5	158.5	157.6	156.7	155.8	154.9	154.0	153.1	152.2
0.35	151.4	150.5	149.7	148.8	148.0	147.1	146.3	145.5	144.7	143.9
0.36	143.1	142.3	141.5	140.7	140.0	139.2	138.4	137.7	136.9	136.2
0.37	135.5	134.7	134.0	133.3	132.6	131.9	131.2	130.5	129.8	129.1
0.38	128.4	127.7	127.1	126.4	125.8	125.1	124.5	123.8	123.2	122.5
0.39	121.9	121.3	120.7	120.1	119.5	118.9	118.3	117.7	117.1	116.5
0.40	115.9	115.3	114.7	114.2	113.6	113.1	112.5	111.9	111.4	110.9
0.41	110.3	109.8	109.2	108.7	108.2	107.7	107.2	106.6	106.1	105.6
0.42	105.1	104.6	104.1	103.6	103.1	102.7	102.2	101.7	101.2	100.8
0.43	100.3	99.8	99.4	98.9	98.5	98.0	97.5	97.1	96.7	96.2
0.44	95.8	95.3	94.9	94.5	94.1	93.6	93.2	92.8	92.4	92.0
0.45	91.6	91.2	90.8	90.4	90.0	89.6	89.2	88.8	88.4	88.0
0.46	87.6	87.3	86.9	86.5	86.1	85.8	85.4	85.0	84.7	84.3
0.47	83.9	83.6	83.2	82.9	82.5	82.2	81.8	81.5	81.2	80.8
0.48	80.5	80.2	79.8	79.5	79.2	78.8	78.5	78.2	77.9	77.5
0.49	77.2	76.9	76.6	76.3	76.0	75.7	75.4	75.1	74.8	74.5
0.50	74.2	73.9	73.6	73.3	73.0	72.7	72.4	72.1	71.9	71.6
0.51	71.3	71.0	70.7	70.5	70.2	69.9	69.6	69.4	69.1	68.8
0.52	68.6	68.3	68.1	67.8	67.5	67.3	67.0	66.8	66.5	66.3
0.53	66.0	65.8	65.6	65.3	65.0	64.8	64.5	64.3	64.1	63.8
0.54	63.6	63.4	63.1	62.9	62.7	62.4	62.2	62.0	61.7	61.5
0.55	61.3	61.1	60.9	60.6	60.4	60.2	60.0	59.8	59.6	59.3
0.56	59.1	58.9	58.7	58.5	58.3	58.1	57.9	57.7	57.5	57.3
0.57	57.1	56.9	56.7	56.5	56.3	56.1	55.9	55.7	55.5	55.3
0.58	55.1	54.9	54.7	54.6	54.4	54.2	54.0	53.8	53.6	53.5
0.59	53.2	53.1	52.9	52.7	52.6	52.4	52.2	52.0	51.9	51.7
0.60	51.5	51.3	51.2	51.0	50.8	50.7	50.5	50.3	50.2	50.0
0.61	49.8	49.7	49.5	49.3	49.2	49.0	48.9	48.7	48.6	48.4
0.62	48.2	48.1	47.9	47.8	47.6	47.5	47.3	47.2	47.0	46.9

TABLE 5 (continued)

Load 10 kgf

Mean diagonal of indentation	Change in length of mean diagonal									
mm	0.000	+ 0.001 mm	+ 0.002 mm	+ 0.003 mm	+ 0.004 mm	+ 0.005 mm	+ 0.006 mm	+ 0.007 mm	+ 0.008 mm	+ 0.009 mm
0.63	46.7	46.6	46.4	46.3	46.1	46.0	45.8	45.7	45.6	45.4
0.64	45.3	45.1	45.0	44.9	44.7	44.6	44.4	44.3	44.2	44.0
0.65	43.9	43.8	43.6	43.5	43.4	43.2	43.1	43.0	42.8	42.7
0.66	42.6	42.4	42.3	42.2	42.1	41.9	41.8	41.7	41.6	41.4
0.67	41.3	41.2	41.1	40.9	40.8	40.7	40.6	40.5	40.3	40.2
0.68	40.1	40.0	39.9	39.8	39.6	39.5	39.4	39.3	39.2	39.1
0.69	38.9	38.8	38.7	38.6	38.5	38.4	38.3	38.2	38.1	38.0
0.70	37.8	37.7	37.6	37.5	37.4	37.3	37.2	37.1	37.0	36.9
0.71	36.8	36.7	36.6	36.5	36.4	36.3	36.2	36.1	36.0	35.9
0.72	35.8	35.7	35.6	35.5	35.4	35.3	35.2	35.1	35.0	34.9
0.73	34.8	34.7	34.6	34.5	34.4	34.3	34.2	34.1	34.0	33.9
0.74	33.86	33.77	33.68	33.59	33.50	33.41	33.32	33.23	33.14	33.05
0.75	32.97	32.88	32.79	32.70	32.62	32.53	32.45	32.36	32.27	32.19
0.76	32.10	32.02	31.94	31.85	31.77	31.69	31.60	31.52	31.44	31.36
0.77	31.28	31.20	31.11	31.03	30.95	30.87	30.79	30.72	30.64	30.56
0.78	30.48	30.40	30.32	30.25	30.17	30.09	30.02	29.94	29.86	29.79
0.79	29.71	29.64	29.56	29.49	29.41	29.34	29.27	29.19	29.12	29.05
0.80	28.97	28.90	28.83	28.76	28.69	28.62	28.54	28.47	28.40	28.33
0.81	28.26	28.19	28.12	28.06	27.99	27.92	27.85	27.78	27.71	27.65
0.82	27.58	27.51	27.44	27.38	27.31	27.25	27.18	27.11	27.05	26.98
0.83	26.92	26.85	26.79	26.72	26.66	26.60	26.53	26.47	26.41	26.34
0.84	26.28	26.22	26.16	26.09	26.03	25.97	25.91	25.85	25.79	25.73
0.85	25.67	25.61	25.55	25.49	25.43	25.37	25.31	25.25	25.19	25.13
0.86	25.07	25.01	24.96	24.90	24.84	24.78	24.73	24.67	24.61	24.56
0.87	24.50	24.44	24.39	24.33	24.28	24.22	24.17	24.11	24.06	24.00
0.88	23.95	23.89	23.84	23.78	23.73	23.68	23.62	23.57	23.52	23.46
0.89	23.41	23.36	23.31	23.25	23.20	23.15	23.10	23.05	23.00	22.94
0.90	22.89	22.84	22.79	22.74	22.69	22.64	22.59	22.54	22.49	22.44
0.91	22.39	22.34	22.29	22.25	22.20	22.15	22.10	22.05	22.00	21.96
0.92	21.91	21.86	21.81	21.77	21.72	21.67	21.63	21.58	21.53	21.49
0.93	21.44	21.39	21.35	21.30	21.26	21.21	21.17	21.12	21.08	21.03
0.94	20.99	20.94	20.90	20.85	20.81	20.77	20.72	20.68	20.63	20.59
0.95	20.55	20.50	20.46	20.42	20.38	20.33	20.29	20.25	20.21	20.16
0.96	20.12	20.08	20.04	20.00	19.95	19.91	19.87	19.83	19.79	19.75
0.97	19.71	19.67	19.63	19.59	19.55	19.51	19.47	19.43	19.39	19.35
0.98	19.31	19.27	19.23	19.19	19.15	19.11	19.07	19.04	19.00	18.96
0.99	18.92	18.88	18.84	18.81	18.77	18.73	18.69	18.66	18.62	18.58
1.00	18.54	18.51	18.47	18.43	18.40	18.36	18.32	18.29	18.25	18.21
1.01	18.18	18.14	18.11	18.07	18.04	18.00	17.96	17.93	17.89	17.86
1.02	17.82	17.79	17.75	17.72	17.68	17.65	17.62	17.58	17.55	17.51
1.03	17.48	17.45	17.41	17.38	17.34	17.31	17.28	17.24	17.21	17.18
1.04	17.14	17.11	17.08	17.05	17.01	16.98	16.95	16.92	16.88	16.85
1.05	16.82	16.79	16.76	16.72	16.69	16.66	16.63	16.60	16.57	16.53
1.06	16.50	16.47	16.44	16.41	16.38	16.35	16.32	16.29	16.26	16.23
1.07	16.20	16.17	16.14	16.11	16.08	16.05	16.02	15.99	15.96	15.93
1.08	15.90	15.87	15.84	15.81	15.78	15.75	15.72	15.69	15.67	15.64
1.09	15.61	15.58	15.55	15.52	15.49	15.47	15.44	15.41	15.38	15.35
1.10	15.33	15.30	15.27	15.24	15.21	15.19	15.16	15.13	15.10	15.08
1.11	15.05	15.02	15.00	14.97	14.94	14.92	14.89	14.86	14.84	14.81
1.12	14.78	14.76	14.73	14.70	14.68	14.65	14.63	14.60	14.57	14.55
1.13	14.52	14.50	14.47	14.45	14.42	14.39	14.37	14.34	14.32	14.29
1.14	14.27	14.24	14.22	14.19	14.17	14.14	14.12	14.10	14.07	14.05
1.15	14.02	14.00	13.97	13.95	13.92	13.90	13.88	13.85	13.83	13.80
1.16	13.78	13.76	13.73	13.71	13.69	13.66	13.64	13.62	13.59	13.57

TABLE 5 (continued)

Load 10 kgf

Mean diagonal of indentation	Change in length of mean diagonal									
	0.000	+ 0.001 mm	+ 0.002 mm	+ 0.003 mm	+ 0.004 mm	+ 0.005 mm	+ 0.006 mm	+ 0.007 mm	+ 0.008 mm	+ 0.009 mm
mm										
1.17	13.55	13.52	13.50	13.48	13.45	13.43	13.41	13.39	13.36	13.34
1.18	13.32	13.30	13.27	13.25	13.23	13.21	13.18	13.16	13.14	13.12
1.19	13.09	13.07	13.05	13.03	13.01	12.99	12.96	12.94	12.92	12.90
1.20	12.88	12.86	12.83	12.81	12.79	12.77	12.75	12.73	12.71	12.69
1.21	12.67	12.64	12.62	12.60	12.58	12.56	12.54	12.52	12.50	12.48
1.22	12.46	12.44	12.42	12.40	12.38	12.36	12.34	12.32	12.30	12.28
1.23	12.26	12.24	12.22	12.20	12.18	12.16	12.14	12.12	12.10	12.08
1.24	12.06	12.04	12.02	12.00	11.98	11.96	11.94	11.93	11.91	11.89
1.25	11.87	11.85	11.83	11.81	11.79	11.77	11.75	11.74	11.72	11.70
1.26	11.68	11.66	11.64	11.62	11.61	11.59	11.57	11.55	11.53	11.52
1.27	11.50	11.48	11.46	11.44	11.43	11.41	11.39	11.37	11.35	11.34
1.28	11.32	11.30	11.28	11.27	11.25	11.23	11.21	11.20	11.18	11.16
1.29	11.14	11.13	11.11	11.09	11.07	11.06	11.04	11.02	11.01	10.99
1.30	10.97	10.96	10.94	10.92	10.91	10.89	10.87	10.86	10.84	10.82
1.31	10.81	10.79	10.77	10.76	10.74	10.72	10.71	10.69	10.67	10.66
1.32	10.64	10.63	10.61	10.59	10.58	10.56	10.55	10.53	10.51	10.50
1.33	10.48	10.47	10.45	10.44	10.42	10.40	10.39	10.37	10.36	10.34
1.34	10.33	10.31	10.30	10.28	10.27	10.25	10.24	10.22	10.21	10.19
1.35	10.17	10.16	10.14	10.13	10.11	10.10	10.09	10.07	10.06	10.04
1.36	10.03	10.01	10.00	9.98	9.97	9.95	9.94	9.92	9.91	9.89
1.37	9.88	9.87	9.85	9.84	9.82	9.81	9.79	9.78	9.77	9.75
1.38	9.74	9.72	9.71	9.70	9.68	9.67	9.65	9.64	9.63	9.61
1.39	9.60	9.58	9.57	9.56	9.54	9.53	9.52	9.50	9.49	9.47
1.40	9.46	9.45	9.43	9.42	9.41	9.39	9.38	9.37	9.35	9.34
1.41	9.33	9.31	9.30	9.29	9.27	9.26	9.25	9.24	9.22	9.21
1.42	9.20	9.18	9.17	9.16	9.14	9.13	9.12	9.11	9.09	9.08
1.43	9.07	9.06	9.04	9.03	9.02	9.01	8.99	8.98	8.97	8.96
1.44	8.94	8.93	8.92	8.91	8.89	8.88	8.87	8.86	8.84	8.83
1.45	8.82	8.81	8.80	8.78	8.77	8.76	8.75	8.74	8.72	8.71
1.46	8.70	8.69	8.68	8.66	8.65	8.64	8.63	8.62	8.60	8.59
1.47	8.58	8.57	8.56	8.55	8.53	8.52	8.51	8.50	8.49	8.48
1.48	8.47	8.45	8.44	8.43	8.42	8.41	8.40	8.39	8.38	8.36
1.49	8.35	8.34	8.33	8.32	8.31	8.30	8.29	8.27	8.26	8.25
1.50	8.24	8.23	8.22	8.21	8.20	8.19	8.18	8.17	8.15	8.14
1.51	8.13	8.12	8.11	8.10	8.09	8.08	8.07	8.06	8.05	8.04
1.52	8.03	8.02	8.01	7.99	7.98	7.97	7.96	7.95	7.94	7.93
1.53	7.92	7.91	7.90	7.89	7.88	7.87	7.86	7.85	7.84	7.83
1.54	7.82	7.81	7.80	7.79	7.78	7.77	7.76	7.75	7.74	7.73
1.55	7.72	7.71	7.70	7.69	7.68	7.67	7.66	7.65	7.64	7.63
1.56	7.62	7.61	7.60	7.59	7.58	7.57	7.56	7.55	7.54	7.53
1.57	7.52	7.51	7.50	7.49	7.48	7.48	7.47	7.46	7.45	7.44
1.58	7.43	7.42	7.41	7.40	7.39	7.38	7.37	7.36	7.35	7.34
1.59	7.34	7.33	7.32	7.31	7.30	7.29	7.28	7.27	7.26	7.25
1.60	7.24	7.23	7.23	7.22	7.21	7.20	7.19	7.18	7.17	7.16
1.61	7.15	7.15	7.14	7.13	7.12	7.11	7.10	7.09	7.08	7.07
1.62	7.07	7.06	7.05	7.04	7.03	7.02	7.01	7.01	7.00	6.99
1.63	6.98	6.97	6.96	6.95	6.95	6.94	6.93	6.92	6.91	6.90
1.64	6.89	6.89	6.88	6.87	6.86	6.85	6.84	6.84	6.83	6.82
1.65	6.81	6.80	6.79	6.79	6.78	6.77	6.76	6.75	6.75	6.74
1.66	6.73	6.72	6.71	6.71	6.70	6.69	6.68	6.67	6.67	6.66
1.67	6.65	6.64	6.63	6.63	6.62	6.61	6.60	6.59	6.59	6.58
1.86	6.57	6.56	6.55	6.55	6.54	6.53	6.52	6.52	6.51	6.50
1.96	6.49	6.48	6.48	6.47	6.46	6.45	6.45	6.44	6.43	6.42
1.70	6.42	6.41	6.40	6.39	6.39	6.38	6.37	6.36	6.36	6.35

TABLE 5 (concluded)

Load 10 kgf

Mean diagonal of indentation	Change in length of mean diagonal									
mm	0.000	+ 0.001 mm	+ 0.002 mm	+ 0.003 mm	+ 0.004 mm	+ 0.005 mm	+ 0.006 mm	+ 0.007 mm	+ 0.008 mm	+ 0.009 mm
1.71	6.34	6.33	6.33	6.32	6.31	6.30	6.30	6.29	6.28	6.28
1.72	6.27	6.26	6.25	6.25	6.24	6.23	6.22	6.22	6.21	6.20
1.73	6.20	6.19	6.18	6.17	6.17	6.16	6.15	6.15	6.14	6.13
1.74	6.12	6.12	6.11	6.10	6.10	6.09	6.08	6.08	6.07	6.06
1.75	6.06	6.05	6.04	6.03	6.03	6.02	6.01	6.01	6.00	5.99
1.76	5.99	5.98	5.97	5.97	5.96	5.95	5.95	5.94	5.93	5.93
1.77	5.92	5.91	5.91	5.90	5.89	5.89	5.88	5.87	5.87	5.86
1.78	5.85	5.85	5.84	5.83	5.83	5.82	5.81	5.81	5.80	5.79
1.79	5.79	5.78	5.77	5.77	5.76	5.76	5.75	5.74	5.74	5.73
1.80	5.72	5.72	5.71	5.70	5.70	5.69	5.69	5.68	5.67	5.67
1.81	5.66	5.65	5.65	5.64	5.64	5.63	5.62	5.62	5.61	5.60
1.82	5.60	5.59	5.59	5.58	5.57	5.57	5.56	5.56	5.55	5.54
1.83	5.54	5.53	5.53	5.52	5.51	5.51	5.50	5.50	5.49	5.48
1.84	5.48	5.47	5.47	5.46	5.45	5.45	5.44	5.44	5.43	5.42
1.85	5.42	5.41	5.41	5.40	5.39	5.39	5.38	5.38	5.37	5.37
1.86	5.36	5.35	5.35	5.34	5.34	5.33	5.33	5.32	5.31	5.31
1.87	5.30	5.30	5.29	5.29	5.28	5.27	5.27	5.26	5.26	5.25
1.88	5.25	5.24	5.24	5.23	5.22	5.22	5.21	5.21	5.20	5.20
1.89	5.19	5.19	5.18	5.17	5.17	5.16	5.16	5.15	5.15	5.14
1.90	5.14	5.13	5.13	5.12	5.12	5.11	5.10	5.10	5.09	5.09
1.91	5.08	5.08	5.07	5.07	5.06	5.06	5.05	5.05	5.04	5.14
1.92	5.03	5.03	5.02	5.01	5.01	5.00	5.00	4.99	4.99	4.98

TABLE 6

Load — 20 kgf

Mean diagonal of indentation	Change in length of mean diagonal									
mm	0.000	+ 0.001 mm	+ 0.002 mm	+ 0.003 mm	+ 0.004 mm	+ 0.005 mm	+ 0.006 mm	+ 0.007 mm	+ 0.008 mm	+ 0.009 mm
0.13	2195	2161	2129	2097	2065	2035	2005	1976	1947	1920
0.14	1892	1865	1839	1814	1789	1764	1740	1716	1693	1671
0.15	1648	1627	1605	1584	1564	1544	1524	1505	1486	1467
0.16	1449	1431	1413	1396	1379	1362	1346	1330	1314	1296
0.17	1283	1268	1254	1239	1225	1211	1197	1184	1171	1157
0.18	1145	1132	1120	1107	1095	1084	1072	1061	1049	1038
0.19	1027	1017	1006	996	985	975	965	956	946	937
0.20	927	918	906	901	891	883	874	866	857	849
0.21	841	833	825	817	810	802	795	788	780	773
0.22	766	759	753	746	736	733	726	720	713	707
0.23	701	695	689	683	677	672	666	660	655	646
0.24	644	639	633	628	623	618	613	608	603	598
0.25	593	589	584	576	575	570	566	562	557	553
0.26	549	544	540	536	532	528	524	520	516	513
0.27	519	505	501	498	464	491	487	483	480	476
0.28	473	471	466	463	460	457	453	450	447	444
0.29	441	438	435	432	429	426	423	420	418	415
0.30	412	406	407	414	401	399	396	394	391	388
0.31	386	383	381	379	376	374	371	369	367	364
0.32	362	360	358	355	353	351	349	347	345	343
0.33	341	339	336	334	332	330	329	327	325	323
0.34	321	319	317	315	313	312	310	308	306	304
0.35	303	301	299	298	296	294	293	291	289	288
0.36	286	285	283	281	280	278	277	275	274	272
0.37	271	269	268	267	265	264	262	261	260	258
0.38	257	255	254	253	252	250	249	248	246	245
0.39	244	243	241	240	239	238	237	235	234	233
0.40	232	231	229	228	227	226	225	224	223	222
0.41	221	220	218	217	216	215	214	213	212	211
0.42	210	209	208	207	206	205	204	203	202.5	201.5
0.43	200.6	199.7	198.7	197.8	196.9	196.0	195.1	194.2	193.3	192.4
0.44	191.6	190.7	189.8	189.0	188.1	187.3	186.4	185.6	184.8	184.0
0.45	183.1	182.3	181.5	180.7	179.9	179.1	178.4	177.6	176.8	176.0
0.46	175.3	174.5	173.8	173.0	172.3	171.5	170.8	170.1	169.3	168.6
0.47	167.9	167.2	166.5	165.8	165.1	164.4	163.7	163.0	162.3	161.6
0.48	161.0	160.3	159.6	159.0	158.3	157.7	157.0	156.4	155.7	155.1
0.49	154.5	153.8	153.2	152.6	152.0	151.4	150.8	150.1	149.5	148.9
0.50	148.3	147.8	147.2	146.6	146.0	145.4	144.9	144.3	143.7	143.1
0.51	142.6	142.0	141.5	140.9	140.4	139.8	139.3	138.8	138.2	137.7
0.52	137.2	136.6	136.1	135.6	135.1	134.6	134.0	133.5	133.0	132.5
0.53	132.0	131.5	131.0	130.5	130.1	129.6	129.1	128.6	128.1	127.7
0.54	127.2	126.7	126.2	125.8	125.3	124.9	124.4	124.0	123.5	123.0
0.55	122.6	122.2	121.7	121.3	120.8	120.4	120.0	119.5	119.1	118.7
0.56	118.3	117.8	117.4	117.0	116.6	116.2	115.8	115.4	115.0	114.6
0.57	114.2	113.8	113.4	113.0	112.6	112.2	111.8	111.4	111.0	110.6
0.58	110.2	109.9	109.5	109.1	108.7	108.4	108.0	107.6	107.3	106.9
0.59	106.5	106.2	105.8	105.5	105.1	104.8	104.4	104.1	103.7	103.4
0.60	103.0	102.7	102.3	102.0	101.7	101.3	101.0	100.7	100.3	100.0
0.61	99.7	99.3	99.0	98.7	98.4	98.1	97.7	97.4	97.1	96.8
0.62	96.5	96.2	95.9	95.6	95.2	94.9	94.6	94.3	94.0	93.7
0.63	93.4	93.1	92.9	92.6	92.3	92.0	91.7	91.4	91.1	90.8
0.64	90.5	90.3	90.0	89.7	89.4	89.1	88.9	88.6	88.3	88.1
0.65	87.8	87.5	87.2	87.0	86.7	86.4	86.2	85.9	85.7	85.4
0.66	85.1	84.9	84.6	84.4	84.1	83.9	83.6	83.4	83.1	82.9

TABLE 6 (continued)

Load 20 kgf

Mean diagonal of indentation	Change in length of mean diagonal									
mm	0.000	+ 0.001 mm	+ 0.002 mm	+ 0.003 mm	+ 0.004 mm	+ 0.005 mm	+ 0.006 mm	+ 0.007 mm	+ 0.008 mm	+ 0.009 mm
0.67	82.6	82.4	82.1	81.9	81.6	81.4	81.2	80.9	80.7	80.4
0.68	80.2	80.0	79.7	79.5	79.3	79.0	78.8	78.6	78.4	78.1
0.69	77.9	77.7	77.4	77.2	77.0	76.8	76.6	76.3	76.1	75.9
0.70	75.7	75.5	75.3	75.0	74.8	74.6	74.4	74.2	74.0	73.8
0.71	73.6	73.4	73.2	73.0	72.7	72.5	72.3	72.1	71.9	71.7
0.72	71.5	71.3	71.1	70.9	70.8	70.6	70.4	70.2	70.0	69.8
0.73	69.6	69.4	69.2	69.0	68.8	68.7	68.5	68.3	68.1	67.9
0.74	67.7	67.5	67.4	67.2	67.0	66.8	66.6	66.5	66.3	66.1
0.75	65.9	65.8	65.6	65.4	65.2	65.1	64.9	64.7	64.5	64.4
0.76	64.2	64.0	63.9	63.7	63.5	63.4	63.2	63.0	62.9	62.7
0.77	62.6	62.4	62.2	62.1	61.9	61.7	61.6	61.4	61.3	61.1
0.78	61.0	60.8	60.6	60.5	60.3	60.2	60.0	59.9	59.7	59.6
0.79	59.4	59.3	59.1	59.0	58.8	58.7	58.5	58.4	58.2	58.1
0.80	57.9	57.8	57.7	57.5	57.4	57.2	57.1	56.9	56.8	56.7
0.81	56.5	56.4	56.2	56.1	56.0	55.8	55.7	55.6	55.4	55.3
0.82	55.2	55.0	54.9	54.8	54.6	54.5	54.4	54.2	54.1	54.0
0.83	53.8	53.7	53.6	53.4	53.3	53.2	53.1	52.9	52.8	52.7
0.84	52.6	52.4	52.3	52.2	52.1	51.9	51.8	51.7	51.6	51.5
0.85	51.3	51.2	51.1	51.0	50.9	50.7	50.6	50.5	50.4	50.3
0.86	50.1	50.0	49.9	49.8	49.7	49.6	49.5	49.3	49.2	49.1
0.87	49.0	48.9	48.8	48.7	48.6	48.4	48.3	48.2	48.1	48.0
0.88	47.9	47.8	47.7	47.6	47.5	47.4	47.2	47.1	47.0	46.9
0.89	46.8	46.7	46.6	46.5	46.4	46.3	46.2	46.1	46.0	45.9
0.90	45.8	45.7	45.6	45.5	45.4	45.3	45.2	45.1	45.0	44.9
0.91	44.8	44.7	44.6	44.5	44.4	44.3	44.2	44.1	44.0	43.9
0.92	43.8	43.7	43.6	43.5	43.4	43.35	43.25	43.16	43.07	42.97
0.93	42.88	42.79	42.70	42.61	42.51	42.42	42.33	42.24	42.15	42.06
0.94	41.97	41.88	41.79	41.71	41.62	41.53	41.44	41.35	41.27	41.18
0.95	41.09	41.01	40.92	40.84	40.75	40.66	40.58	40.50	40.41	40.33
0.96	40.24	40.16	40.08	39.99	39.91	39.83	39.74	39.66	39.58	39.50
0.97	39.42	39.34	39.25	39.17	39.09	39.01	38.93	38.85	38.77	38.70
0.98	38.62	38.54	38.46	38.38	38.30	38.23	38.15	38.07	37.99	37.92
0.99	37.84	37.76	37.69	37.61	37.54	37.46	37.39	37.31	37.24	37.16
1.00	37.09	37.01	36.94	36.87	36.79	36.72	36.65	36.57	36.50	36.43
1.01	36.36	36.28	36.21	36.14	36.07	36.00	35.93	35.86	35.79	35.72
1.02	35.65	35.58	35.51	35.44	35.37	35.30	35.23	35.16	35.09	35.03
1.03	34.96	34.89	34.82	34.76	34.69	34.62	34.55	34.49	34.42	34.36
1.04	34.29	34.22	34.16	34.09	34.03	33.96	33.90	33.83	33.77	33.70
1.05	33.64	33.58	33.51	33.45	33.38	33.32	33.26	33.20	33.13	33.07
1.06	33.01	32.95	32.88	32.82	32.76	32.70	32.64	32.58	32.51	32.45
1.07	32.39	32.33	32.27	32.21	32.15	32.09	32.03	31.97	31.91	31.86
1.08	31.80	31.74	31.68	31.62	31.56	31.50	31.45	31.39	31.33	31.27
1.09	31.22	31.16	31.10	31.04	30.99	30.93	30.87	30.82	30.76	30.71
1.10	30.65	30.60	30.54	30.48	30.43	30.37	30.32	30.26	30.21	30.16
1.11	30.10	30.05	29.99	29.94	29.89	29.83	29.78	29.72	29.67	29.62
1.12	29.57	29.51	29.46	29.41	29.36	29.30	29.25	29.20	29.15	29.10
1.13	29.04	28.99	28.94	28.89	28.84	28.79	28.74	28.69	28.64	28.59
1.14	28.54	28.49	28.44	28.39	28.34	28.29	28.24	28.19	28.14	28.09
1.15	28.04	27.99	27.95	27.90	27.85	27.80	27.75	27.71	27.66	27.61
1.16	27.56	27.51	27.47	27.42	27.37	27.33	27.28	27.23	27.19	27.14
1.17	27.09	27.05	27.00	26.95	26.91	26.86	26.82	26.77	26.73	26.68
1.18	26.64	26.59	26.55	26.50	26.46	26.41	26.37	26.32	26.28	26.23
1.19	26.19	26.15	26.10	26.06	26.01	25.97	25.93	25.88	25.84	25.80
1.20	25.76	25.71	25.67	25.63	25.58	25.54	25.50	25.46	25.42	25.37

TABLE 6 (continued)

Load 20 kgf

Mean diagonal of indentation	Change in length of mean diagonal									
mm	0.000	+ 0.001 mm	+ 0.002 mm	+ 0.003 mm	+ 0.004 mm	+ 0.005 mm	+ 0.006 mm	+ 0.007 mm	+ 0.008 mm	+ 0.009 mm
1.21	25.33	25.29	25.25	25.21	25.16	25.12	25.08	25.04	25.00	24.96
1.22	24.92	24.88	24.84	24.80	24.75	24.71	24.67	24.63	24.59	24.55
1.23	24.51	24.47	24.43	24.39	24.36	24.32	24.28	24.24	24.20	24.16
1.24	24.12	24.08	24.04	24.00	23.97	23.93	23.89	23.85	23.81	23.77
1.25	23.74	23.70	23.66	23.62	23.58	23.55	23.51	23.47	23.43	23.40
1.26	23.36	23.32	23.29	23.25	23.21	23.18	23.14	23.10	23.07	23.03
1.27	22.99	22.96	22.92	22.89	22.85	22.81	22.78	22.74	22.71	22.67
1.28	22.64	22.60	22.57	22.53	22.50	22.46	22.43	22.39	22.36	22.32
1.29	22.29	22.25	22.22	22.18	22.15	22.11	22.08	22.05	22.01	21.98
1.30	21.95	21.91	21.88	21.84	21.81	21.78	21.74	21.71	21.68	21.64
1.31	21.61	21.58	21.55	21.51	21.48	21.45	21.41	21.38	21.35	21.32
1.32	21.29	21.25	21.22	21.19	21.16	21.12	21.09	21.06	21.03	21.00
1.33	20.97	20.93	20.90	20.87	20.84	20.81	20.78	20.75	20.72	20.69
1.34	20.65	20.62	20.59	20.56	20.53	20.50	20.47	20.44	20.41	20.38
1.35	20.35	20.32	20.29	20.26	20.23	20.20	20.17	20.14	20.11	20.08
1.36	20.05	20.02	19.99	19.96	19.93	19.90	19.88	19.85	19.82	19.79
1.37	19.76	19.73	19.70	19.67	19.65	19.62	19.59	19.56	19.53	19.50
1.38	19.47	19.45	19.42	19.39	19.36	19.33	19.31	19.28	19.25	19.22
1.39	19.20	19.17	19.14	19.11	19.09	19.06	19.03	19.00	18.98	18.95
1.40	18.92	18.90	18.87	18.84	18.81	18.79	18.76	18.73	18.71	18.68
1.41	18.65	18.63	18.60	18.58	18.55	18.52	18.50	18.47	18.44	18.42
1.42	18.39	18.37	18.34	18.32	18.29	18.26	18.24	18.21	18.19	18.16
1.43	18.14	18.11	18.09	18.06	18.04	18.01	17.99	17.96	17.94	17.91
1.44	17.89	17.86	17.84	17.81	17.79	17.76	17.74	17.71	17.69	17.66
1.45	17.64	17.62	17.59	17.57	17.54	17.52	17.49	17.47	17.45	17.42
1.46	17.40	17.38	17.35	17.33	17.30	17.28	17.26	17.23	17.21	17.19
1.47	17.16	17.14	17.12	17.09	17.07	17.05	17.02	17.00	16.98	16.95
1.48	16.93	16.91	16.89	16.86	16.84	16.82	16.80	16.77	16.75	16.73
1.49	16.71	16.68	16.66	16.64	16.62	16.59	16.57	16.55	16.53	16.51
1.50	16.48	16.46	16.44	16.42	16.40	16.37	16.35	16.33	16.31	16.29
1.51	16.27	16.24	16.22	16.20	16.18	16.16	16.14	16.12	16.09	16.07
1.52	16.05	16.03	16.01	15.99	15.97	15.95	15.93	15.91	15.88	15.86
1.53	15.84	15.82	15.80	15.78	15.76	15.74	15.72	15.70	15.68	15.66
1.54	15.64	15.62	15.60	15.58	15.56	15.54	15.52	15.50	15.48	15.46
1.55	15.44	15.42	15.40	15.38	15.36	15.34	15.32	15.30	15.28	15.26
1.56	15.24	15.22	15.20	15.18	15.16	15.14	15.12	15.10	15.08	15.07
1.57	15.05	15.03	15.01	14.99	14.97	14.95	14.93	14.91	14.89	14.88
1.58	14.86	14.84	14.82	14.80	14.78	14.76	14.74	14.73	14.71	14.69
1.59	14.67	14.65	14.63	14.61	14.60	14.58	14.56	14.54	14.52	14.51
1.60	14.49	14.47	14.45	14.43	14.42	14.40	14.38	14.36	14.34	14.33
1.61	14.31	14.29	14.27	14.25	14.24	14.22	14.20	14.18	14.17	14.15
1.62	14.13	14.11	14.10	14.08	14.06	14.04	14.03	14.01	13.99	13.98
1.63	13.96	13.94	13.92	13.91	13.89	13.87	13.86	13.84	13.82	13.81
1.64	13.79	13.77	13.76	13.74	13.72	13.71	13.69	13.67	13.66	13.64
1.65	13.62	13.61	13.59	13.57	13.56	13.54	13.52	13.51	13.49	13.48
1.66	13.46	13.44	13.43	13.41	13.39	13.38	13.36	13.35	13.33	13.31
1.67	13.30	13.28	13.27	13.25	13.23	13.22	13.20	13.19	13.17	13.16
1.68	13.14	13.12	13.11	13.09	13.08	13.06	13.05	13.03	13.02	13.00
1.69	12.99	12.97	12.95	12.94	12.92	12.91	12.89	12.88	12.86	12.85
1.70	12.83	12.82	12.80	12.79	12.77	12.76	12.74	12.73	12.71	12.70
1.71	12.68	12.67	12.65	12.64	12.62	12.61	12.59	12.58	12.57	12.55
1.72	12.54	12.52	12.51	12.49	12.48	12.46	12.45	12.43	12.42	12.41
1.73	12.39	12.38	12.36	12.35	12.33	12.32	12.31	12.29	12.28	12.26
1.74	12.25	12.24	12.22	12.21	12.19	12.18	12.17	12.15	12.14	12.12

TABLE 6 (concluded)

Load 20 kgf

Mean diagonal of indentation	Change in length of mean diagonal									
mm	0.000	+ 0.001 mm	+ 0.002 mm	+ 0.003 mm	+ 0.004 mm	+ 0.005 mm	+ 0.006 mm	+ 0.007 mm	+ 0.008 mm	+ 0.009 mm
1.75	12.11	12.10	12.08	12.07	12.05	12.04	12.03	12.01	12.00	11.99
1.76	11.97	11.96	11.95	11.93	11.92	11.91	11.89	11.88	11.86	11.85
1.77	11.84	11.82	11.81	11.80	11.78	11.77	11.76	11.74	11.73	11.72
1.78	11.71	11.69	11.68	11.67	11.65	11.64	11.63	11.61	11.60	11.59
1.79	11.57	11.56	11.55	11.54	11.52	11.51	11.50	11.48	11.47	11.46
1.80	11.45	11.43	11.42	11.41	11.40	11.38	11.37	11.36	11.35	11.33
1.81	11.32	11.31	11.30	11.28	11.27	11.26	11.25	11.23	11.22	11.21
1.82	11.20	11.18	11.17	11.16	11.15	11.14	11.12	11.11	11.10	11.09
1.83	11.07	11.06	11.05	11.04	11.03	11.01	11.00	10.99	10.98	10.97
1.84	10.95	10.94	10.93	10.92	10.91	10.90	10.88	10.87	10.86	10.85
1.85	10.84	10.82	10.81	10.80	10.79	10.78	10.77	10.75	10.74	10.73
1.86	10.72	10.71	10.70	10.69	10.67	10.66	10.65	10.64	10.63	10.62
1.87	10.61	10.59	10.58	10.57	10.56	10.55	10.54	10.53	10.52	10.50
1.88	10.49	10.48	10.47	10.46	10.45	10.44	10.43	10.42	10.40	10.39
1.89	10.38	10.37	10.36	10.35	10.34	10.33	10.32	10.31	10.30	10.28
1.90	10.27	10.26	10.25	10.24	10.23	10.22	10.21	10.20	10.19	10.18
1.91	10.17	10.16	10.14	10.13	10.12	10.11	10.10	10.09	10.08	10.07
1.92	10.06	10.05	10.04	10.03	10.02	10.01	10.00	9.99	9.98	9.97
1.93	9.96	9.95	9.94	9.93	9.92	9.91	9.89	9.88	9.87	9.86
1.94	9.85	9.84	9.83	9.82	9.81	9.80	9.79	9.78	9.77	9.76
1.95	9.75	9.74	9.73	9.72	9.71	9.70	9.69	9.68	9.67	9.66
1.96	9.65	9.64	9.63	9.62	9.61	9.61	9.60	9.59	9.58	9.57
1.97	9.56	9.55	9.54	9.53	9.52	9.51	9.50	9.49	9.48	9.47
1.98	9.46	9.45	9.44	9.43	9.42	9.41	9.40	9.39	9.38	9.37
1.99	9.37	9.36	9.35	9.34	9.33	9.32	9.31	9.30	9.29	9.28

TABLE 7

Load 30 kgf

Mean diagonal of indentation	Change in length of mean diagonal									
mm	0.000	+ 0.001 mm	+ 0.002 mm	+ 0.003 mm	+ 0.004 mm	+ 0.005 mm	+ 0.006 mm	+ 0.007 mm	+ 0.008 mm	+ 0.009 mm
0.16	2173	2146	2120	2094	2068	2043	2019	1995	1971	1948
0.17	1925	1903	1880	1859	1837	1817	1796	1776	1756	1736
0.18	1717	1698	1679	1661	1643	1625	1608	1591	1574	1557
0.19	1541	1525	1509	1493	1478	1463	1448	1433	1419	1405
0.20	1391	1377	1363	1350	1337	1324	1311	1298	1286	1274
0.21	1261	1250	1238	1226	1215	1203	1192	1181	1171	1160
0.22	1149	1139	1129	1119	1109	1099	1089	1080	1070	1061
0.23	1052	1043	1034	1025	1016	1007	999	990	982	974
0.24	966	958	950	942	934	927	919	912	905	897
0.25	890	883	876	869	862	856	849	842	836	829
0.26	823	817	810	804	798	792	786	780	775	769
0.27	763	757	752	746	741	736	730	725	720	715
0.28	710	705	700	695	690	685	680	675	671	666
0.29	661	657	652	648	644	639	635	631	626	622
0.30	618	614	610	606	602	598	594	590	586	583
0.31	579	575	571	568	564	561	557	554	550	547
0.32	543	540	537	533	530	527	523	520	517	514
0.33	511	508	505	502	499	496	493	490	487	484
0.34	481	478	476	473	470	467	465	462	459	457
0.35	454	452	449	446	444	441	439	436	434	432
0.36	429	427	425	422	420	418	415	413	411	409
0.37	406	404	402	400	398	396	393	391	389	387
0.38	385	383	381	379	377	375	373	371	370	368
0.39	366	364	362	360	358	357	355	353	351	349
0.40	348	346	344	343	341	339	337	336	334	333
0.41	331	329	328	326	325	323	321	320	318	317
0.42	315	314	312	311	309	308	307	305	304	302
0.43	301	299	298	297	295	294	293	291	290	289
0.44	287	286	285	283	282	281	280	278	277	276
0.45	275	274	272	271	270	269	268	266	265	264
0.46	263	262	261	260	258	257	256	255	254	253
0.47	252	251	250	249	248	247	246	245	243	242
0.48	241	240	239	238	237.5	236.5	235.5	234.6	233.6	232.6
0.49	231.7	230.8	229.8	228.9	228.0	227.0	226.1	225.2	224.3	223.4
0.50	222.5	221.6	220.8	219.9	219.0	218.1	217.3	216.4	215.6	214.7
0.51	213.9	213.0	212.2	211.4	210.6	209.8	208.9	208.1	207.3	206.5
0.52	205.7	204.9	204.2	203.4	202.6	201.8	201.1	200.3	199.5	198.8
0.53	198.0	197.3	196.6	195.8	195.1	194.4	193.6	192.9	192.2	191.5
0.54	190.8	190.1	189.4	188.7	188.0	187.3	186.6	185.9	185.2	184.6
0.55	183.9	183.2	182.6	181.9	181.3	180.6	180.0	179.3	178.7	178.0
0.56	177.4	176.8	176.1	175.5	174.9	174.3	173.7	173.0	172.4	171.8
0.57	171.2	170.6	170.0	169.4	168.8	168.3	167.7	167.1	166.5	165.9
0.58	165.4	164.8	164.2	163.7	163.1	162.6	162.0	161.5	160.9	160.4
0.59	159.8	159.3	158.7	158.2	157.7	157.1	156.6	156.1	155.6	155.0
0.60	154.5	154.0	153.5	153.0	152.5	152.0	151.5	151.0	150.5	150.0
0.61	149.5	149.0	148.5	148.0	147.6	147.1	146.6	146.1	145.7	145.2
0.62	144.7	144.3	143.8	143.3	142.9	142.4	142.0	141.5	141.1	140.6
0.63	140.2	139.7	139.3	138.8	138.4	138.0	137.5	137.1	136.7	136.2
0.64	135.8	135.4	135.0	134.6	134.1	133.7	133.3	132.9	132.5	132.1
0.65	131.7	131.3	130.9	130.5	130.1	129.7	129.3	128.9	128.5	128.1
0.66	127.7	127.3	126.9	126.6	126.2	125.8	125.4	125.0	124.7	124.3
0.67	123.9	123.6	123.2	122.8	122.5	122.1	121.7	121.4	121.0	120.7
0.68	120.3	120.0	119.6	119.3	118.9	118.6	118.2	117.9	117.5	117.2
0.69	116.8	116.5	116.2	115.8	115.5	115.2	114.8	114.5	114.2	113.9

TABLE 7 (continued)

Load 30 kgf

Mean diagonal of indentation	Change in length of mean diagonal									
mm	0.000	+ 0.001 mm	+ 0.002 mm	+ 0.003 mm	+ 0.004 mm	+ 0.005 mm	+ 0.006 mm	+ 0.007 mm	+ 0.008 mm	+ 0.009 mm
0.70	113.5	113.2	112.9	112.6	112.2	111.9	111.6	111.3	111.0	110.7
0.71	110.4	110.0	109.7	109.4	109.1	108.8	108.5	108.2	107.9	107.6
0.72	107.3	107.0	106.7	106.4	106.1	105.8	105.5	105.3	105.0	104.7
0.73	104.4	104.1	103.8	103.5	103.3	103.0	102.7	102.4	102.1	101.9
0.74	101.6	101.3	101.0	100.8	100.5	100.2	100.0	99.7	99.4	99.2
0.75	98.9	98.6	98.4	98.1	97.9	97.6	97.3	97.1	96.8	96.6
0.76	96.3	96.1	95.8	95.6	95.3	95.1	94.8	94.6	94.3	94.1
0.77	93.8	93.6	93.3	93.1	92.9	92.6	92.4	92.1	91.9	91.7
0.78	91.4	91.2	91.0	90.7	90.5	90.3	90.0	89.8	89.6	89.4
0.79	89.1	88.9	88.7	88.5	88.2	88.0	87.8	87.6	87.4	87.1
0.80	86.9	86.7	86.5	86.3	86.1	85.8	85.6	85.4	85.2	85.0
0.81	84.8	84.6	84.4	84.2	84.0	83.8	83.5	83.3	83.1	82.9
0.82	82.7	82.5	82.3	82.1	81.9	81.7	81.5	81.3	81.1	80.9
0.83	80.8	80.6	80.4	80.2	80.0	79.8	79.6	79.4	79.2	79.0
0.84	78.8	78.7	78.5	78.3	78.1	77.9	77.7	77.5	77.4	77.2
0.85	77.0	76.8	76.6	76.5	76.3	76.1	75.9	75.7	75.6	75.4
0.86	75.2	75.0	74.9	74.7	74.5	74.4	74.2	74.0	73.8	73.7
0.87	73.5	73.3	73.2	73.0	72.8	72.7	72.5	72.3	72.2	72.0
0.88	71.8	71.7	71.5	71.4	71.2	71.0	70.9	70.7	70.5	70.4
0.89	70.2	70.1	69.9	69.8	69.6	69.4	69.3	69.1	69.0	68.8
0.90	68.7	68.5	68.4	68.2	68.1	67.9	67.8	67.6	67.5	67.3
0.91	67.2	67.0	66.9	66.7	66.6	66.4	66.3	66.2	66.0	65.9
0.92	65.7	65.6	65.4	65.3	65.2	65.0	64.9	64.7	64.6	64.5
0.93	64.3	64.2	64.0	63.9	63.8	63.6	63.5	63.4	63.2	63.1
0.94	63.0	62.8	62.7	62.6	62.4	62.3	62.2	62.0	61.9	61.8
0.95	61.6	61.5	61.4	61.3	61.1	61.0	60.9	60.7	60.6	60.5
0.96	60.4	60.2	60.1	60.0	59.9	59.7	59.6	59.5	59.4	59.2
0.97	59.1	59.0	58.9	58.8	58.6	58.5	58.4	58.3	58.2	58.0
0.98	57.9	57.8	57.7	57.6	57.5	57.3	57.2	57.1	57.0	56.9
0.99	56.8	56.6	56.5	56.4	56.3	56.2	56.1	56.0	55.9	55.7
1.00	55.6	55.5	55.4	55.3	55.2	55.1	55.0	54.9	54.8	54.6
1.01	54.5	54.4	54.3	54.2	54.1	54.0	53.9	53.8	53.7	53.6
1.02	53.5	53.4	53.3	53.2	53.1	53.0	52.8	52.7	52.6	52.5
1.03	52.4	52.3	52.2	52.1	52.0	51.9	51.8	51.7	51.6	51.5
1.04	51.4	51.3	51.2	51.1	51.0	50.9	50.8	50.75	50.65	50.56
1.05	50.46	50.36	50.27	50.17	50.08	49.98	49.89	49.79	49.70	49.60
1.06	49.51	49.42	49.33	49.23	49.14	49.05	48.96	48.86	48.77	48.68
1.07	48.59	48.50	48.41	48.32	48.23	48.14	48.05	47.96	47.87	47.78
1.08	47.69	47.61	47.52	47.43	47.34	47.26	47.17	47.08	47.00	46.91
1.09	46.82	46.74	46.65	46.57	46.48	46.40	46.31	46.23	46.14	46.06
1.10	45.98	45.89	45.81	45.73	45.64	45.56	45.48	45.40	45.31	45.23
1.11	45.15	45.07	44.99	44.91	44.83	44.75	44.67	44.59	44.51	44.43
1.12	44.35	44.27	44.19	44.11	44.03	43.96	43.88	43.80	43.72	43.64
1.13	43.57	43.49	43.41	43.34	43.26	43.18	43.11	43.03	42.96	42.88
1.14	42.81	42.73	42.66	42.58	42.51	42.43	42.36	42.29	42.21	42.14
1.15	42.07	41.99	41.92	41.85	41.77	41.70	41.63	41.56	41.49	41.41
1.16	41.34	41.27	41.20	41.13	41.06	40.99	40.92	40.85	40.78	40.71
1.17	40.64	40.57	40.50	40.43	40.36	40.29	40.23	40.16	40.09	40.02
1.18	39.95	39.89	39.82	39.75	39.68	39.62	39.55	39.48	39.42	39.35
1.19	39.28	39.22	39.15	39.09	39.02	38.96	38.89	38.83	38.76	38.70
1.20	38.63	38.57	38.50	38.44	38.38	38.31	38.25	38.19	38.12	38.06
1.21	38.00	37.93	37.87	37.81	37.75	37.68	37.62	37.56	37.50	37.44
1.22	37.38	37.32	37.25	37.19	37.13	37.07	37.01	36.95	36.89	36.83
1.23	36.77	36.71	36.65	36.59	36.53	36.47	36.41	36.36	36.30	36.24

TABLE 7 (continued)

Load 30 kgf

Mean diagonal of indentation	Change in length of mean diagonal									
mm	0.000	+ 0.001 mm	+ 0.002 mm	+ 0.003 mm	+ 0.004 mm	+ 0.005 mm	+ 0.006 mm	+ 0.007 mm	+ 0.008 mm	+ 0.009 mm
1.24	36.18	36.12	36.06	36.01	35.95	35.89	35.83	35.78	35.72	35.66
1.25	35.60	35.55	35.49	35.43	35.38	35.32	35.26	35.21	35.15	35.10
1.26	35.04	34.99	34.93	34.87	34.82	34.76	34.71	34.65	34.60	34.55
1.27	34.49	34.44	34.38	34.33	34.28	34.22	34.17	34.11	34.06	34.01
1.28	33.95	33.90	33.85	33.80	33.74	33.69	33.64	33.59	33.53	33.48
1.29	33.43	33.38	33.33	33.28	33.22	33.17	33.12	33.07	33.02	32.97
1.30	32.92	32.87	32.82	32.77	32.72	32.67	32.62	32.57	32.52	32.47
1.31	32.42	32.37	32.32	32.27	32.22	32.17	32.12	32.07	32.02	31.98
1.32	31.93	31.88	31.83	31.78	31.74	31.69	31.64	31.59	31.54	31.50
1.33	31.45	31.40	31.36	31.31	31.26	31.21	31.17	31.12	31.07	31.03
1.34	30.98	30.94	30.89	30.84	30.80	30.75	30.71	30.66	30.62	30.57
1.35	30.52	30.48	30.43	30.39	30.34	30.30	30.26	30.21	30.17	30.12
1.36	30.08	30.03	29.99	29.95	29.90	29.86	29.81	29.77	29.73	29.68
1.37	29.64	29.60	29.55	29.51	29.47	29.42	29.38	29.34	29.30	29.25
1.38	29.21	29.17	29.13	29.09	29.04	29.00	28.96	28.92	28.88	28.83
1.39	28.79	28.75	28.71	28.67	28.63	28.59	28.55	28.51	28.46	28.42
1.40	28.38	28.34	28.30	28.26	28.22	28.18	28.14	28.10	28.06	28.02
1.41	27.98	27.94	27.90	27.86	27.82	27.78	27.75	27.71	27.67	27.63
1.42	27.59	27.55	27.51	27.47	27.43	27.40	27.36	27.32	27.28	27.24
1.43	27.20	27.17	27.13	27.09	27.05	27.02	26.98	26.94	26.90	26.87
1.44	26.83	26.79	26.75	26.72	26.68	26.64	26.61	26.57	26.53	26.50
1.45	26.46	26.42	26.39	26.35	26.31	26.28	26.24	26.21	26.17	26.13
1.46	26.10	26.06	26.03	25.99	25.96	25.92	25.89	25.85	25.81	25.78
1.47	25.74	25.71	25.67	25.64	25.60	25.57	25.54	25.50	25.47	25.43
1.48	25.40	25.36	25.33	25.30	25.26	25.23	25.19	25.16	25.13	25.09
1.49	25.06	25.02	24.99	24.96	24.92	24.89	24.86	24.82	24.79	24.76
1.50	24.72	24.69	24.66	24.63	24.59	24.56	24.53	24.50	24.46	24.43
1.51	24.40	24.37	24.33	24.30	24.27	24.24	24.21	24.17	24.14	24.11
1.52	24.08	24.05	24.02	23.98	23.95	23.92	23.89	23.86	23.83	23.80
1.53	23.76	23.73	23.70	23.67	23.64	23.61	23.58	23.55	23.52	23.49
1.54	23.46	23.43	23.40	23.37	23.34	23.31	23.28	23.25	23.22	23.19
1.55	23.16	23.13	23.10	23.07	23.04	23.01	22.98	22.95	22.92	22.89
1.56	22.86	22.83	22.80	22.77	22.74	22.71	22.68	22.66	22.63	22.60
1.57	22.57	22.54	22.51	22.48	22.45	22.43	22.40	22.37	22.34	22.31
1.58	22.28	22.26	22.23	22.20	22.17	22.14	22.12	22.09	22.06	22.03
1.59	22.01	21.98	21.95	21.92	21.89	21.87	21.84	21.81	21.79	21.76
1.60	21.73	21.70	21.68	21.65	21.62	21.60	21.57	21.54	21.52	21.49
1.61	21.46	21.44	21.41	21.38	21.36	21.33	21.30	21.28	21.25	21.22
1.62	21.20	21.17	21.15	21.12	21.09	21.07	21.04	21.02	20.99	20.96
1.63	20.94	20.91	20.89	20.86	20.84	20.81	20.79	20.76	20.73	20.71
1.64	20.68	20.66	20.63	20.61	20.58	20.56	20.53	20.51	20.48	20.46
1.65	20.43	20.41	20.38	20.36	20.34	20.31	20.29	20.26	20.24	20.21
1.66	20.19	20.16	20.14	20.12	20.09	20.07	20.04	20.02	20.00	19.97
1.67	19.95	19.92	19.90	19.88	19.85	19.83	19.80	19.78	19.76	19.73
1.68	19.71	19.69	19.66	19.64	19.62	19.59	19.57	19.55	19.52	19.50
1.69	19.48	19.45	19.43	19.41	19.39	19.36	19.34	19.32	19.29	19.27
1.70	19.25	19.23	19.20	19.18	19.16	19.14	19.11	19.09	19.07	19.05
1.71	19.03	19.00	18.98	18.96	18.94	18.91	18.89	18.87	18.85	18.83
1.72	18.80	18.78	18.76	18.74	18.72	18.70	18.67	18.65	18.63	18.61
1.73	18.59	18.57	18.54	18.52	18.50	18.48	18.46	18.44	18.42	18.40
1.74	18.37	18.35	18.33	18.31	18.29	18.27	18.25	18.23	18.21	18.19
1.75	18.17	18.14	18.12	18.10	18.08	18.06	18.04	18.02	18.00	17.98
1.76	17.96	17.94	17.92	17.90	17.88	17.86	17.84	17.82	17.80	17.78
1.77	17.76	17.74	17.72	17.70	17.68	17.66	17.64	17.62	17.60	17.58

TABLE 7 (concluded)

Load 30 kgf

Mean diagonal of indentation	Change in length of mean diagonal									
mm	0.000	+ 0.001 mm	+ 0.002 mm	+ 0.003 mm	+ 0.004 mm	+ 0.005 mm	+ 0.006 mm	+ 0.007 mm	+ 0.008 mm	+ 0.009 mm
1.78	17.56	17.54	17.52	17.50	17.48	17.46	17.44	17.42	17.40	17.38
1.79	17.36	17.34	17.32	17.30	17.29	17.27	17.25	17.23	17.21	17.19
1.80	17.17	17.15	17.13	17.11	17.09	18.08	17.06	17.04	17.02	17.00
1.81	16.98	16.96	16.94	16.92	16.91	16.89	16.87	16.85	16.83	16.81
1.82	16.79	16.78	16.76	16.74	16.72	16.70	16.68	16.67	16.65	16.63
1.83	16.61	16.59	16.58	16.56	16.54	16.52	16.50	16.49	16.47	16.45
1.84	16.43	16.41	16.40	16.38	16.36	16.34	16.33	16.31	16.29	16.27
1.85	16.25	16.24	16.22	16.20	16.18	16.17	16.15	16.13	16.11	16.10
1.86	16.08	16.06	16.05	16.03	16.01	15.99	15.98	15.96	15.94	15.93
1.87	15.91	15.89	15.87	15.86	15.84	15.82	15.81	15.79	15.77	15.76
1.88	15.74	15.72	15.71	15.69	15.67	15.66	15.64	15.62	15.61	15.59
1.89	15.57	15.56	15.54	15.52	15.51	15.49	15.48	15.46	15.44	15.43
1.90	15.41	15.39	15.38	15.36	15.35	15.33	15.31	15.30	15.28	15.27
1.91	15.25	15.23	15.22	15.20	15.19	15.17	15.15	15.14	15.12	15.11
1.92	15.09	15.08	15.06	15.04	15.03	15.01	15.00	14.98	14.97	14.95
1.93	14.93	14.92	14.90	14.89	14.87	14.86	14.84	14.83	14.81	14.80
1.94	14.78	14.77	14.75	14.74	14.72	14.71	14.69	14.68	14.66	14.65
1.95	14.63	14.62	14.60	14.59	14.57	14.56	14.54	14.53	14.51	14.50
1.96	14.48	14.47	14.45	14.44	14.42	14.41	14.39	14.38	14.36	14.35
1.97	14.33	14.32	14.31	14.29	14.28	14.26	14.25	14.23	14.22	14.20
1.98	14.19	14.18	14.16	14.15	14.13	14.12	14.10	14.09	14.08	14.06
1.99	14.05	14.03	14.02	14.01	13.99	13.98	13.96	13.95	13.94	13.92

TABLE 8

Load 50 kgf

Mean diagonal of indentation	Change in length of mean diagonal									
mm	0.000	+ 0.001 mm	+ 0.002 mm	+ 0.003 mm	+ 0.004 mm	+ 0.005 mm	+ 0.006 mm	+ 0.007 mm	+ 0.008 mm	+ 0.009 mm
0.21	2102	2083	2063	2044	2025	2006	1987	1969	1951	1933
0.22	1916	1898	1881	1864	1848	1831	1815	1799	1784	1768
0.23	1753	1738	1723	1708	1693	1679	1665	1651	1637	1623
0.24	1610	1596	1583	1570	1557	1545	1532	1520	1508	1495
0.25	1483	1472	1460	1449	1437	1426	1415	1404	1393	1382
0.26	1372	1361	1351	1340	1330	1320	1310	1301	1291	1281
0.27	1272	1262	1253	1244	1235	1226	1217	1208	1200	1191
0.28	1183	1174	1166	1158	1150	1142	1134	1126	1118	1110
0.29	1102	1095	1087	1080	1073	1065	1058	1051	1044	1037
0.30	1030	1023	1017	1010	1003	997	990	984	977	971
0.31	965	959	952	946	940	934	929	923	917	911
0.32	905	900	894	889	883	878	872	867	862	857
0.33	851	846	841	836	831	826	821	816	812	807
0.34	802	797	793	788	784	779	774	770	766	761
0.35	757	753	748	744	740	736	732	727	723	719
0.36	715	711	708	704	700	696	692	688	685	681
0.37	677	674	670	666	663	659	656	652	649	645
0.38	642	639	635	632	629	626	622	619	616	613
0.39	610	606	603	600	597	594	591	588	585	582
0.40	579	577	574	571	568	565	562	560	557	554
0.41	552	549	546	544	541	538	536	533	531	528
0.42	526	523	521	518	516	513	511	509	506	504
0.43	501	499	497	495	492	490	488	486	483	481
0.44	479	477	475	472	470	468	466	464	462	460
0.45	458	456	454	452	450	448	446	444	442	440
0.46	438	436	434	433	431	429	427	425	423	422
0.47	420	418	416	414	413	411	409	408	406	404
0.48	402	401	399	397	396	394	393	391	389	388
0.49	386	385	383	381	380	378	377	375	374	372
0.50	371	369	368	366	365	364	362	361	359	358
0.51	356	355	354	352	351	350	348	347	346	344
0.52	343	342	340	339	338	336	335	334	333	331
0.53	330	329	328	326	325	324	323	322	320	319
0.54	318	317	316	314	313	312	311	310	309	308
0.55	307	305	304	303	302	301	300	299	298	297
0.56	296	295	294	293	291	290	289	288	287	286
0.57	285	284	283	282	281	280	279	278.5	277.5	276.6
0.58	275.6	274.7	273.7	272.8	271.9	270.9	270.0	269.1	268.2	267.3
0.59	266.4	265.5	264.6	263.7	262.8	261.9	261.0	260.1	259.3	258.4
0.60	257.6	256.7	255.8	255.0	254.2	253.3	252.5	251.6	250.8	250.0
0.61	249.2	248.4	247.6	246.7	245.9	245.1	244.3	243.6	242.8	242.0
0.62	241.2	240.4	239.7	238.9	238.1	237.4	236.6	235.8	235.1	234.3
0.63	233.6	232.9	232.1	231.4	230.7	229.9	229.2	228.5	227.8	227.1
0.64	226.4	225.7	225.0	224.3	223.6	222.9	222.2	221.5	220.8	220.1
0.65	219.5	218.8	218.1	217.4	216.8	216.1	215.5	214.8	214.1	213.5
0.66	212.9	212.2	211.6	210.9	210.3	209.7	209.0	208.4	207.8	207.2
0.67	206.5	205.9	205.3	204.7	204.1	203.5	202.9	202.3	201.7	201.1
0.68	200.5	199.9	199.3	198.8	198.2	197.6	197.0	196.5	195.9	195.3
0.69	194.7	194.2	193.6	193.1	192.5	192.0	191.4	190.9	190.3	189.8
0.70	189.2	188.7	188.1	187.6	187.1	186.5	186.0	185.5	185.0	184.4
0.71	183.9	183.4	182.9	182.4	181.9	181.4	180.9	180.4	179.9	179.4
0.72	178.9	178.4	177.9	177.4	176.9	176.4	175.9	175.4	174.9	174.5
0.73	174.0	173.5	173.0	172.6	172.1	171.6	171.2	170.7	170.2	169.8
0.74	169.3	168.9	168.4	168.0	167.5	167.1	166.6	166.2	165.7	165.3

TABLE 8 (continued)

Load 50 kgf

Mean diagonal of indentation	Change in length of mean diagonal									
	mm	0.000	+ 0.001 mm	+ 0.002 mm	+ 0.003 mm	+ 0.004 mm	+ 0.005 mm	+ 0.006 mm	+ 0.007 mm	+ 0.008 mm
0.75	164.8	164.4	164.0	163.5	163.1	162.7	162.2	161.8	161.4	160.9
0.76	160.5	160.1	159.7	159.3	158.8	158.4	158.0	157.6	157.2	156.8
0.77	156.4	156.0	155.6	155.2	154.8	154.4	154.0	153.6	153.2	152.8
0.78	152.4	152.0	151.6	151.2	150.8	150.5	150.1	149.7	149.3	148.9
0.79	148.6	148.2	147.8	147.4	147.1	146.7	146.3	146.0	145.6	145.2
0.80	144.9	144.5	144.2	143.8	143.4	143.1	142.7	142.4	142.0	141.7
0.81	141.3	141.0	140.6	140.3	139.9	139.6	139.2	138.9	138.6	138.2
0.82	137.9	137.6	137.2	136.9	136.6	136.2	135.9	135.6	135.2	134.9
0.83	134.6	134.3	133.9	133.6	133.3	133.0	132.7	132.3	132.0	131.7
0.84	131.4	131.1	130.8	130.5	130.2	129.9	129.5	129.2	128.9	128.6
0.85	128.3	128.0	127.7	127.4	127.1	126.8	126.5	126.2	125.9	125.7
0.86	125.4	125.1	124.8	124.5	124.2	123.9	123.6	123.3	123.1	122.8
0.87	122.5	122.2	121.9	121.7	121.4	121.1	120.8	120.5	120.3	120.0
0.88	119.7	119.5	119.2	118.9	118.6	118.4	118.1	117.8	117.6	117.3
0.89	117.1	116.8	116.5	116.3	116.0	115.7	115.5	115.2	115.0	114.7
0.90	114.5	114.2	114.0	113.7	113.5	113.2	113.0	112.7	112.5	112.2
0.91	112.0	111.7	111.5	111.2	111.0	110.7	110.5	110.3	110.0	109.8
0.92	109.5	109.3	109.1	108.8	108.6	108.4	108.1	107.9	107.7	107.4
0.93	107.2	107.0	106.7	106.5	106.3	106.1	105.8	105.6	105.4	105.2
0.94	104.9	104.7	104.5	104.3	104.0	103.8	103.6	103.4	103.2	103.0
0.95	102.7	102.5	102.3	102.1	101.9	101.7	101.4	101.2	101.0	100.8
0.96	100.6	100.4	100.2	100.0	99.8	99.6	99.4	99.2	98.9	98.7
0.97	98.5	98.3	98.1	97.9	97.7	97.5	97.3	97.1	96.9	96.7
0.98	96.5	96.3	96.1	96.0	95.8	95.6	95.4	95.2	95.0	94.8
0.99	94.6	94.4	94.2	94.0	93.8	93.7	93.5	93.3	93.1	92.9
1.00	92.7	92.5	92.3	92.2	92.0	91.8	91.6	91.4	91.3	91.1
1.01	90.9	90.7	90.5	90.4	90.2	90.0	89.8	89.6	89.5	89.3
1.02	89.1	88.9	88.8	88.6	88.4	88.3	88.1	87.9	87.7	87.6
1.03	87.4	87.2	87.1	86.9	86.7	86.6	86.4	86.2	86.1	85.9
1.04	85.7	85.6	85.4	85.2	85.1	84.9	84.7	84.6	84.4	84.3
1.05	84.1	83.9	83.8	83.6	83.5	83.3	83.1	83.0	82.8	82.7
1.06	82.5	82.4	82.2	82.1	81.9	81.7	81.6	81.4	81.3	81.1
1.07	81.0	80.0	80.7	80.5	80.4	80.2	80.1	79.9	79.8	79.6
1.08	79.5	79.3	79.2	79.1	78.9	78.8	78.6	78.5	78.3	78.2
1.09	78.0	77.9	77.8	77.6	77.5	77.3	77.2	77.0	76.9	76.8
1.10	76.6	76.5	76.3	76.2	76.1	75.9	75.8	75.7	75.5	75.4
1.11	75.3	75.1	75.0	74.8	74.7	74.6	74.4	74.3	74.2	74.0
1.12	73.9	73.8	73.7	73.5	73.4	73.3	73.1	73.0	72.9	72.7
1.13	72.6	72.5	72.4	72.2	72.1	72.0	71.8	71.9	71.3	71.5
1.14	71.3	71.2	71.1	71.0	70.8	70.7	70.6	70.5	70.4	70.2
1.15	70.1	70.0	69.9	69.7	69.6	69.5	69.4	69.3	69.1	69.0
1.16	68.9	68.8	68.7	68.5	68.4	68.3	68.2	68.1	68.0	67.8
1.17	67.7	67.6	67.5	67.4	67.3	67.2	67.0	66.9	66.8	66.7
1.18	66.6	66.5	66.4	66.3	66.1	66.0	65.9	65.8	65.7	65.6
1.19	65.5	65.4	65.3	65.1	65.0	64.9	64.8	64.7	64.6	64.5
1.20	64.4	64.3	64.2	64.1	64.0	63.9	63.7	63.6	63.5	63.4
1.21	63.3	63.2	63.1	63.0	62.9	62.8	62.7	62.6	62.5	62.4
1.22	62.3	62.2	62.1	62.0	61.9	61.8	61.7	61.6	61.5	61.4
1.23	61.3	61.2	61.1	61.0	60.9	60.8	60.7	60.6	60.5	60.4
1.24	60.3	60.2	60.1	60.0	59.9	59.8	59.7	59.6	59.5	59.4
1.25	59.3	59.24	59.15	59.06	58.96	58.87	58.77	58.68	58.59	58.49
1.26	58.40	58.31	58.22	58.12	58.03	57.94	57.85	57.76	57.67	57.58
1.27	57.49	57.40	57.30	57.21	57.13	57.04	56.95	56.86	56.77	56.68
1.28	56.59	56.50	56.41	56.33	56.24	56.15	56.06	55.98	55.89	55.80

TABLE 8 (continued)

Load 50 kgf

Mean diagonal of indentation	Change in length of mean diagonal									
mm	0.000	+ 0.001 mm	+ 0.002 mm	+ 0.003 mm	+ 0.004 mm	+ 0.005 mm	+ 0.006 mm	+ 0.007 mm	+ 0.008 mm	+ 0.009 mm
1.29	55.72	55.63	55.54	55.46	55.37	55.29	55.20	55.12	55.03	54.95
1.30	54.86	54.78	54.69	54.61	54.53	54.44	54.36	54.28	54.19	54.11
1.31	54.03	53.95	53.86	53.78	53.70	53.62	53.54	53.46	53.37	53.29
1.32	53.21	53.13	53.05	52.97	52.89	52.81	52.73	52.65	52.57	52.49
1.33	52.42	52.34	52.26	52.18	52.10	52.02	51.95	51.87	51.79	51.71
1.34	51.64	51.56	51.48	51.41	51.33	51.25	51.18	51.10	51.03	50.95
1.35	50.87	50.80	50.72	50.65	50.57	50.50	50.43	50.35	50.28	50.20
1.36	50.13	50.06	49.98	49.91	49.84	49.76	49.69	49.62	49.54	49.47
1.37	49.40	49.33	49.26	49.18	49.11	49.04	48.97	48.90	48.83	48.76
1.38	48.69	48.62	48.55	48.48	48.41	48.34	48.27	48.20	48.13	48.06
1.39	47.99	47.92	47.85	47.78	47.71	47.65	47.58	47.51	47.44	47.37
1.40	47.31	47.24	47.17	47.10	47.04	46.97	46.90	46.84	46.77	46.70
1.41	46.64	46.57	46.50	46.44	46.37	46.31	46.24	46.18	46.11	46.05
1.42	45.98	45.92	45.85	45.79	45.72	45.66	45.60	45.53	45.47	45.40
1.43	45.34	45.28	45.21	45.15	45.09	45.03	44.96	44.90	44.84	44.78
1.44	44.71	44.65	44.59	44.53	44.47	44.40	44.34	44.28	44.22	44.16
1.45	44.10	44.04	43.98	43.92	43.86	43.80	43.74	43.68	43.62	43.56
1.46	43.50	43.44	43.38	43.32	43.26	43.20	43.14	43.08	43.02	42.97
1.47	42.91	42.85	42.79	42.73	42.67	42.62	42.56	42.50	42.44	42.39
1.48	42.33	42.27	42.22	42.16	42.10	42.04	41.99	41.93	41.88	41.82
1.49	41.76	41.71	41.65	41.60	41.54	41.48	41.43	41.37	41.32	41.26
1.50	41.21	41.15	41.10	41.04	40.99	40.93	40.88	40.83	40.77	40.72
1.51	40.66	40.61	40.56	40.50	40.45	40.40	40.34	40.29	40.24	40.18
1.52	40.13	40.08	40.03	39.97	39.92	39.87	39.82	39.76	39.71	39.66
1.53	39.61	39.56	39.50	39.45	39.40	39.35	39.30	39.25	39.20	39.15
1.54	39.10	39.04	38.99	38.94	38.89	38.84	38.79	38.74	38.69	38.64
1.55	38.59	38.54	38.49	38.44	38.39	38.34	38.30	38.25	38.20	38.15
1.56	38.10	38.05	38.00	37.95	37.90	37.86	37.81	37.76	37.71	37.66
1.57	37.62	37.57	37.52	37.47	37.42	37.38	37.33	37.28	37.24	37.19
1.58	37.14	37.09	37.05	37.00	36.95	36.91	36.86	36.81	36.77	36.72
1.59	36.68	36.63	36.58	36.54	36.49	36.45	36.40	36.35	36.31	36.26
1.60	36.22	36.17	36.13	36.08	36.04	35.99	35.95	35.90	35.86	35.81
1.61	35.77	35.73	35.68	35.64	35.59	35.55	35.50	35.46	35.42	35.37
1.62	35.33	35.29	35.24	35.20	35.16	35.11	35.07	35.03	34.98	34.94
1.63	34.90	34.85	34.81	34.77	34.73	34.68	34.64	34.60	34.56	34.52
1.64	34.47	34.43	34.39	34.35	34.31	34.26	34.22	34.18	34.14	34.10
1.65	34.06	34.02	33.97	33.93	33.89	33.85	33.81	33.77	33.73	33.69
1.66	33.65	33.61	33.57	33.53	33.49	33.45	33.41	33.37	32.93	33.29
1.67	33.25	33.21	33.17	33.13	33.09	33.05	33.01	32.97	32.93	32.89
1.68	32.85	32.81	32.77	32.73	32.70	32.66	32.62	32.58	32.54	32.50
1.69	32.46	32.42	32.39	32.35	32.31	32.27	32.23	32.20	32.16	32.12
1.70	32.08	32.04	32.01	31.97	31.93	31.89	31.86	31.82	31.78	31.75
1.71	31.71	31.67	31.63	31.60	31.56	31.52	31.49	31.45	31.41	31.38
1.72	31.34	31.30	31.27	31.23	31.20	31.16	31.12	31.09	31.05	31.02
1.73	30.98	30.94	30.91	30.87	30.84	30.80	30.77	30.73	30.69	30.66
1.74	30.62	30.59	30.55	30.52	30.48	30.45	30.41	30.38	30.34	30.31
1.75	30.28	30.24	30.21	30.17	30.14	30.10	30.07	30.03	30.00	29.97
1.76	29.93	29.90	29.86	29.83	29.80	29.76	29.73	29.70	29.66	29.63
1.77	29.60	29.56	29.53	29.49	29.46	29.43	29.40	29.36	29.33	29.30
1.78	29.26	29.23	29.20	29.17	29.13	29.10	29.07	29.03	29.00	28.97
1.79	28.94	28.91	28.87	28.84	28.81	28.78	28.74	28.71	28.68	28.65
1.80	28.62	28.59	28.55	28.52	28.49	28.46	28.43	28.40	28.36	28.33
1.81	28.30	28.27	28.24	28.21	28.18	28.15	28.11	28.08	28.05	28.02
1.82	27.99	27.96	27.93	27.90	27.87	27.84	27.81	27.78	27.75	27.72