NOTICE: This standard has either been superseded and replaced by a new version or withdrawn. Contact ASTM International (www.astm.org) for the latest information.

Designation: D 3665 – 02

Standard Practice for Random Sampling of Construction Materials[1]

This standard is issued under the fixed designation D 3665; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This practice covers the determination of random locations (or timing) at which samples of construction materials can be taken. For the exact physical procedures for securing the sample, such as a description of the sampling tool, the number of increments needed for a sample, or the size of the sample, reference should be made to the appropriate standard method. The selection procedures in Section 4 utilize the table of four-digit numbers given in Table 1.

1.2 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*

C 172 Practice for Sampling Freshly Mixed Concrete[2]

C 183 Practice for Sampling and the Amount of Testing of Hydraulic Cement[3]

D 75 Practice for Sampling Aggregates[4]

D 140 Practice for Sampling Bituminous Materials[4]

D 345 Test Method for Sampling and Testing Calcium Chloride for Roads and Structural Applications[4]

D 979 Practice for Sampling Bituminous Paving Mixtures[4]

D 5361 Practice for Sampling Compacted Bituminous Mixtures for Laboratory Testing[4]

E 105 Practice for Probability Sampling of Materials[5]

E 122 Practice for Choice of Sample Size to Estimate a Measure of Quality for a Lot or Process[5]

E 141 Practice for Acceptance of Evidence Based on the Results of Probability Sampling[5]

3. Significance and Use

3.1 This practice is useful for determining the location or time, or both, to take a sample in order to eliminate any intentional or minimize any unintentional bias on the part of the person taking the sample.

NOTE 1—The effectiveness of this practice in achieving random samples is limited only by the conscientiousness of the user in following the stipulated procedures.

3.2 A less detailed procedure is included in 5.8 for normal usage and is considered the most practical means except where the sampling is deemed extremely critical or where dispute is anticipated.

3.3 The selection procedures and examples in this standard provide a practical approach for ensuring that construction material samples are obtained in a random manner. Additional details concerning the number of sample increments, the number of samples, the quantities of material in each, and the procedures for extracting sample increments or samples from the construction lot or process are contained in Practices C 172, C 183, D 75, D 140, D 979, D 5361, and Test Method D 345.

3.4 This standard contains examples citing road and paving materials. The concepts outlined therein are applicable to the random sampling of any construction material and can easily be adapted thereto.

3.5 Additional sampling guidance is provided in Practice E 105 concerning probability sampling, Practice E 122 concerning choosing sample sizes to estimate the average quality of a lot or process (see Note 2), and in Practice E 141 for acceptance of evidence based on results of probability sampling.

NOTE 2—The guidance contained in Practice E 122 is not available in other documents referenced in this section.

3.6 The best and most practical method for ensuring that samples of construction materials include the full range of a construction process is by incorporating a stratified-random sampling procedure into the sampling process. To implement a stratified-random sampling procedure, divide the lot to be sampled into the desired number of equal sublots and randomly sample each sublot in accordance with this standard.

NOTE 3—If the sublots are of unequal size, it will likely be necessary to weight the samples in order to maintain a fair and defensible sampling process.

[1] This practice is under the jurisdiction of ASTM Committee D04 on Road and Paving Materials and is the direct responsibility of Subcommittee D04.30 on Methods of Sampling.

Current edition approved Dec. 10, 2002. Published February 2003. Originally approved in 1978. Last previous edition approved in 1999 as D 3665-99.

[2] *Annual Book of ASTM Standards*, Vol 04.02.

[3] *Annual Book of ASTM Standards*, Vol 04.01.

[4] *Annual Book of ASTM Standards*, Vol 04.03.

[5] *Annual Book of ASTM Standards*, Vol 14.02.

Copyright © ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959, United States.

NOTICE: This standard has either been superseded and replaced by a new version or withdrawn. Contact ASTM International (www.astm.org) for the latest information.

TABLE 1 Table of Random Numbers

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	0.0747	0.9908	0.7128	0.1100	0.9586	0.6746	0.0618	0.6843	0.3724	0.5563	0.8697	0.3662	0.2156	0.8643	0.5692	0.3350	0.1634	0.9557	0.5128	0.0931
2	0.1579	0.5348	0.1094	0.0785	0.0694	0.3623	0.3153	0.4182	0.5431	0.2079	0.3439	0.9225	0.7096	0.0488	0.4475	0.9850	0.8570	0.6543	0.3945	0.2898
3	0.6545	0.2054	0.3654	0.4849	0.2375	0.7008	0.2302	0.8945	0.1050	0.0939	0.1701	0.3628	0.7326	0.3496	0.7584	0.3922	0.1801	0.3785	0.4230	0.6340
4	0.7771	0.5684	0.3641	0.2839	0.6441	0.3994	0.8714	0.7783	0.2312	0.4262	0.0885	0.5032	0.7120	0.3271	0.0299	0.9276	0.7909	0.4995	0.8441	0.1960
5	0.5950	0.6068	0.5177	0.7500	0.8845	0.0654	0.5100	0.7197	0.6332	0.0401	0.6457	0.6288	0.0941	0.9641	0.8883	0.9752	0.5257	0.0424	0.3186	0.0906
6	0.5446	0.6811	0.6317	0.8782	0.6486	0.6956	0.8084	0.8824	0.6280	0.4053	0.2713	0.7759	0.7327	0.8682	0.4024	0.6919	0.9935	0.2236	0.7590	0.7186
7	0.6074	0.4514	0.8458	0.8805	0.3272	0.4951	0.0502	0.3469	0.3596	0.2388	0.8058	0.8202	0.4848	0.0831	0.2729	0.7151	0.2286	0.2231	0.7040	0.4219
8	0.5230	0.3413	0.7700	0.2934	0.2938	0.2554	0.2626	0.2379	0.0901	0.5202	0.1786	0.0856	0.6858	0.6744	0.9953	0.9740	0.7905	0.3979	0.4505	0.7848
9	0.0520	0.2910	0.5071	0.4171	0.5374	0.5522	0.7310	0.2841	0.0657	0.0249	0.0365	0.7750	0.0494	0.3423	0.3946	0.7372	0.3917	0.2911	0.8452	0.8042
10	0.0748	0.5330	0.7781	0.8309	0.7996	0.6697	0.3624	0.5200	0.8251	0.3677	0.5843	0.2496	0.4569	0.5922	0.6591	0.2317	0.4693	0.9533	0.5194	0.0535
11	0.3358	0.7229	0.8300	0.1384	0.6163	0.4872	0.8737	0.5689	0.6916	0.4636	0.7601	0.8562	0.0905	0.2191	0.9436	0.3117	0.6782	0.0551	0.6850	0.0933
12	0.7081	0.5302	0.5939	0.1827	0.1605	0.7077	0.7009	0.3198	0.8479	0.8650	0.4269	0.8879	0.6123	0.8640	0.7456	0.9556	0.8055	0.2979	0.6098	0.4045
13	0.8174	0.2389	0.0459	0.8230	0.7066	0.4224	0.2721	0.2914	0.8115	0.0845	0.4523	0.1408	0.1431	0.1857	0.6462	0.2633	0.1187	0.3307	0.1954	0.5531
14	0.0716	0.3396	0.9098	0.7288	0.6059	0.3393	0.2086	0.7414	0.0848	0.2351	0.1697	0.7290	0.9382	0.6355	0.6787	0.6030	0.3747	0.6819	0.1364	0.3636
15	0.2529	0.8794	0.6920	0.3417	0.9636	0.3280	0.7914	0.8085	0.5540	0.7864	0.4288	0.1275	0.8081	0.2968	0.8627	0.4526	0.0200	0.2935	0.8056	0.0040
16	0.4752	0.2411	0.2463	0.2470	0.5404	0.1266	0.1145	0.4639	0.2283	0.4260	0.1380	0.4722	0.5792	0.9899	0.4385	0.1651	0.4184	0.1371	0.8905	0.4740
17	0.6979	0.3783	0.7200	0.2276	0.0572	0.8382	0.9163	0.6868	0.2053	0.5727	0.1066	0.1643	0.7234	0.3692	0.2995	0.3164	0.9847	0.0700	0.8433	0.8966
18	0.5614	0.3988	0.5652	0.1268	0.4177	0.8427	0.3762	0.6873	0.5737	0.7606	0.1704	0.3697	0.8076	0.8456	0.5040	0.5266	0.3728	0.4110	0.1436	0.9623
19	0.2788	0.6972	0.4797	0.2441	0.7747	0.6485	0.5865	0.3128	0.7903	0.7055	0.3607	0.4959	0.7487	0.5484	0.3194	0.7554	0.1183	0.7472	0.0318	0.4008
20	0.2812	0.5934	0.9148	0.9333	0.5009	0.9757	0.6600	0.9859	0.1909	0.7268	0.2068	0.6592	0.4497	0.1861	0.0135	0.2533	0.9124	0.4643	0.8099	0.1805
21	0.6309	0.8515	0.3480	0.1368	0.7117	0.1757	0.0988	0.4791	0.9198	0.0708	0.2446	0.3615	0.1746	0.7166	0.4975	0.6699	0.0348	0.7029	0.9215	0.4443
22	0.5220	0.5869	0.2445	0.6146	0.2442	0.9419	0.4498	0.8941	0.6362	0.5454	0.0960	0.8411	0.0698	0.5648	0.4896	0.9944	0.5984	0.2254	0.6556	0.8225
23	0.0367	0.0788	0.7110	0.5432	0.8802	0.4543	0.0061	0.9173	0.7080	0.7466	0.6456	0.6714	0.8891	0.7929	0.4613	0.5567	0.2219	0.6831	0.0439	0.1030
24	0.2365	0.6469	0.8719	0.7650	0.8271	0.5516	0.2984	0.1590	0.3044	0.7751	0.9164	0.5354	0.0701	0.5013	0.6013	0.3348	0.7550	0.1065	0.0102	0.8375
25	0.8922	0.7232	0.3066	0.3543	0.8840	0.0639	0.8259	0.4115	0.1595	0.3081	0.1912	0.6520	0.6833	0.3086	0.1654	0.7115	0.7264	0.2409	0.8952	0.6575
26	0.0943	0.1662	0.1803	0.8264	0.1687	0.7838	0.2524	0.4905	0.1142	0.4811	0.1718	0.3565	0.0952	0.5150	0.1531	0.4150	0.8746	0.6829	0.8359	0.1222
27	0.9332	0.1245	0.0262	0.3072	0.1351	0.0877	0.6815	0.8976	0.4724	0.9748	0.0434	0.5911	0.5598	0.7725	0.2647	0.7465	0.3009	0.4672	0.9710	0.9893
28	0.9446	0.6190	0.5937	0.3910	0.6759	0.8892	0.2855	0.0004	0.7832	0.1356	0.9162	0.7360	0.1013	0.4191	0.2380	0.8184	0.1405	0.5434	0.4854	0.9227
29	0.0630	0.2919	0.5379	0.8272	0.1324	0.6053	0.4478	0.0055	0.9065	0.0014	0.3814	0.0727	0.5280	0.6696	0.5537	0.5501	0.5440	0.0378	0.1409	0.7881
30	0.6668	0.8500	0.7617	0.2571	0.2540	0.4675	0.3331	0.0855	0.9079	0.0268	0.8455	0.9960	0.5665	0.7374	0.7797	0.0783	0.8599	0.2454	0.4307	0.4235
31	0.6406	0.6335	0.2593	0.7228	0.5771	0.9646	0.4596	0.8743	0.5377	0.8009	0.6740	0.2918	0.8753	0.1852	0.9272	0.1961	0.2731	0.0775	0.0377	0.0258
32	0.2988	0.2182	0.0113	0.8098	0.6283	0.5566	0.4806	0.0771	0.5818	0.6700	0.9389	0.8163	0.5862	0.1366	0.8261	0.9044	0.4760	0.9724	0.4503	0.4051
33	0.6889	0.2370	0.7518	0.7689	0.8429	0.2292	0.1696	0.1057	0.3036	0.1040	0.3345	0.2410	0.1404	0.9982	0.4077	0.3571	0.2290	0.1882	0.4284	0.2932
34	0.1398	0.7363	0.6408	0.1277	0.8468	0.8487	0.6217	0.6055	0.8929	0.1533	0.1627	0.5066	0.0591	0.0655	0.1285	0.5920	0.0051	0.7927	0.1480	0.7462
35	0.1854	0.9911	0.5553	0.5752	0.2484	0.8131	0.6099	0.8276	0.9034	0.4942	0.4624	0.9470	0.9441	0.0539	0.4048	0.3369	0.4748	0.2541	0.6429	0.1190
36	0.3035	0.2702	0.5624	0.3048	0.1477	0.8296	0.6968	0.6153	0.5983	0.2902	0.2174	0.8274	0.7860	0.0141	0.1342	0.5597	0.2327	0.2449	0.5768	0.7622
37	0.7579	0.7321	0.2534	0.9571	0.0215	0.2168	0.0617	0.0928	0.6293	0.5167	0.7073	0.6981	0.4296	0.6983	0.6984	0.8936	0.2720	0.5696	0.8189	0.0579
38	0.4876	0.4334	0.3236	0.4658	0.8652	0.8921	0.5114	0.7652	0.2528	0.7677	0.5511	0.2017	0.7097	0.8948	0.5753	0.7743	0.2817	0.9943	0.1874	0.3299
39	0.7680	0.3214	0.9594	0.4506	0.2975	0.2802	0.2635	0.1547	0.3633	0.6018	0.4974	0.7401	0.1218	0.5993	0.8663	0.6436	0.5925	0.5308	0.9360	0.6319
40	0.7817	0.8220	0.9475	0.9127	0.6915	0.4584	0.4788	0.5493	0.8437	0.1611	0.3686	0.5466	0.7931	0.9261	0.1749	0.8672	0.0372	0.3913	0.6677	0.1995
41	0.0729	0.9746	0.9929	0.8474	0.9447	0.4406	0.4870	0.3088	0.2927	0.2451	0.2693	0.3587	0.9601	0.5293	0.4998	0.3239	0.6544	0.1973	0.6690	0.2497
42	0.9706	0.5872	0.2386	0.1284	0.3553	0.6965	0.1784	0.8344	0.8521	0.9206	0.8580	0.6996	0.3555	0.7439	0.4123	0.6228	0.8439	0.9931	0.6970	0.1508
43	0.3713	0.4437	0.3558	0.6056	0.1722	0.8451	0.1562	0.9356	0.3748	0.8933	0.9741	0.8813	0.0184	0.3142	0.2396	0.8780	0.0506	0.7934	0.4754	0.9945
44	0.2486	0.5881	0.4711	0.4247	0.4139	0.3592	0.4101	0.1279	0.2326	0.1848	0.3285	0.2948	0.7429	0.5835	0.9345	0.8812	0.7191	0.7079	0.9803	0.4049
45	0.3179	0.0628	0.4342	0.9208	0.6107	0.3191	0.5897	0.1465	0.4713	0.1867	0.7419	0.7609	0.1216	0.2498	0.0449	0.0632	0.4057	0.6186	0.5988	0.5121
46	0.1669	0.8308	0.3289	0.3237	0.0224	0.6422	0.5053	0.0059	0.5207	0.4540	0.5799	0.5093	0.6188	0.7458	0.7865	0.0331	0.5898	0.3007	0.5316	0.8819

NOTICE: This standard has either been superseded and replaced by a new version or withdrawn. Contact ASTM International (www.astm.org) for the latest information.

TABLE 1 *Continued*

47	0.8606	0.6998	0.7262	0.9596	0.3752	0.6680	0.8865	0.7282	0.7260	0.2978	0.1664	0.7030	0.3520	0.0284	0.4605	0.5233	0.9753	0.8413	0.2208	0.2321
48	0.2921	0.3652	0.9289	0.6231	0.2505	0.6322	0.3325	0.4549	0.3467	0.9969	0.8475	0.2412	0.2644	0.5970	0.2578	0.7180	0.0395	0.2301	0.8133	0.4175
49	0.2945	0.6689	0.7694	0.0342	0.2303	0.3648	0.1010	0.9168	0.0259	0.2229	0.9433	0.0864	0.5503	0.0736	0.6732	0.6538	0.4627	0.6473	0.2548	0.0571
50	0.5978	0.5914	0.5210	0.2474	0.7589	0.4715	0.9110	0.4563	0.0683	0.6866	0.5904	0.8100	0.7730	0.0444	0.9570	0.9705	0.4684	0.0355	0.8252	0.8726
51	0.1507	0.5050	0.8412	0.5442	0.9337	0.3083	0.2678	0.2192	0.4834	0.3795	0.2545	0.6225	0.9562	0.4044	0.5024	0.9703	0.7922	0.7734	0.0826	0.6793
52	0.7444	0.9194	0.4130	0.9534	0.8193	0.6766	0.0721	0.1843	0.8768	0.9736	0.6901	0.1637	0.8460	0.5258	0.4486	0.8162	0.9904	0.8543	0.8094	0.2807
53	0.0126	0.1474	0.2118	0.5538	0.5273	0.9977	0.4820	0.6939	0.2728	0.6969	0.5186	0.3981	0.1775	0.3026	0.5505	0.0356	0.1488	0.2636	0.6749	0.1999
54	0.5605	0.6620	0.8266	0.5841	0.4267	0.5307	0.3407	0.5876	0.4166	0.1043	0.4364	0.8745	0.2539	0.6413	0.2356	0.2203	0.2761	0.9887	0.9783	0.1766
55	0.0937	0.8387	0.6747	0.7612	0.5783	0.2466	0.9294	0.1136	0.2364	0.2740	0.9443	0.4366	0.3653	0.1492	0.2151	0.6274	0.9394	0.4957	0.8779	0.3501
56	0.5380	0.6102	0.7370	0.5890	0.2758	0.7223	0.3554	0.5742	0.0658	0.9992	0.9606	0.7717	0.3238	0.3650	0.4640	0.8063	0.8832	0.3056	0.2085	0.8704
57	0.7027	0.9635	0.6633	0.4997	0.7711	0.8226	0.5463	0.2822	0.9240	0.6397	0.7549	0.7460	0.8380	0.7949	0.8423	0.6438	0.5340	0.9464	0.1370	0.0751
58	0.3282	0.5104	0.0391	0.5707	0.3488	0.6893	0.2000	0.5767	0.0868	0.0529	0.2923	0.6433	0.9890	0.7843	0.1780	0.8631	0.5090	0.0115	0.6294	0.8167
59	0.6948	0.2944	0.1715	0.0158	0.0622	0.7561	0.6808	0.4140	0.8114	0.3863	0.9609	0.9397	0.5282	0.5744	0.0143	0.4601	0.3683	0.8917	0.9717	0.4765
60	0.3680	0.0120	0.7593	0.4348	0.1198	0.5772	0.5542	0.5356	0.4234	0.1514	0.1527	0.5877	0.1661	0.0861	0.3674	0.2438	0.2999	0.2455	0.1598	0.0186
61	0.3666	0.4702	0.5449	0.9512	0.3968	0.6048	0.9625	0.5151	0.1109	0.7336	0.9627	0.6291	0.7782	0.2500	0.3411	0.5361	0.3144	0.2936	0.5391	0.7337
62	0.4779	0.3843	0.3070	0.8244	0.2025	0.1873	0.7618	0.9541	0.0795	0.5357	0.9009	0.8630	0.1490	0.4371	0.9228	0.9105	0.2092	0.2547	0.7648	0.6051
63	0.1569	0.4033	0.8388	0.1427	0.2234	0.0984	0.7973	0.4004	0.0137	0.8728	0.6952	0.2943	0.7041	0.4833	0.9555	0.3485	0.9844	0.8756	0.3212	0.8539
64	0.9296	0.4026	0.3679	0.1983	0.6062	0.8032	0.7876	0.7873	0.7805	0.2171	0.4709	0.7495	0.3877	0.7607	0.3906	0.9517	0.8392	0.9016	0.9220	0.6876
65	0.5129	0.2856	0.6878	0.1093	0.0917	0.8091	0.1132	0.6369	0.5430	0.4728	0.4405	0.7196	0.0438	0.3914	0.1964	0.0066	0.3990	0.8635	0.4213	0.5562
66	0.6498	0.2866	0.8215	0.7569	0.8258	0.6713	0.7454	0.2531	0.5081	0.0485	0.8473	0.7222	0.9314	0.6954	0.8166	0.4544	0.9367	0.3612	0.3774	0.9309
67	0.4401	0.6613	0.8031	0.9413	0.2343	0.6336	0.6982	0.9691	0.0470	0.3005	0.8168	0.3544	0.1872	0.7753	0.4403	0.9101	0.7849	0.8465	0.4373	0.3699
68	0.5944	0.2501	0.9476	0.7253	0.8045	0.4499	0.6298	0.8618	0.1360	0.5653	0.0919	0.6385	0.1603	0.1194	0.4467	0.6067	0.0178	0.4399	0.8087	0.0718
69	0.9048	0.3332	0.9516	0.0400	0.8240	0.1274	0.0778	0.1891	0.5864	0.5888	0.4321	0.3758	0.7005	0.9135	0.3221	0.2133	0.2405	0.8734	0.9854	0.2052
70	0.4308	0.7707	0.7304	0.2390	0.2115	0.1442	0.3487	0.1340	0.3618	0.8733	0.0260	0.5575	0.3831	0.4248	0.5899	0.6072	0.9599	0.1942	0.5332	0.0201
71	0.1392	0.5901	0.3090	0.5788	0.8175	0.8394	0.8911	0.8303	0.3097	0.1597	0.5262	0.9800	0.2061	0.9449	0.3895	0.8316	0.0242	0.9563	0.5458	0.6672
72	0.5487	0.2821	0.4374	0.5410	0.7217	0.5819	0.2809	0.3042	0.0480	0.7861	0.6100	0.5351	0.2358	0.3726	0.8557	0.2585	0.4065	0.1906	0.1325	0.3523
73	0.2947	0.4902	0.1557	0.4568	0.5087	0.5816	0.2711	0.8052	0.4062	0.9235	0.3254	0.7742	0.8556	0.0844	0.1230	0.6888	0.4823	0.0923	0.9997	0.5276
74	0.7147	0.9137	0.5699	0.6089	0.5649	0.9588	0.4168	0.1416	0.3746	0.6560	0.2868	0.7185	0.3434	0.1388	0.1932	0.4558	0.5022	0.4424	0.1169	0.0083
75	0.4926	0.3771	0.9265	0.6507	0.1613	0.7691	0.4678	0.3727	0.9567	0.8987	0.4252	0.0145	0.9876	0.7888	0.2779	0.8666	0.2150	0.3281	0.3402	0.0018
76	0.4674	0.0198	0.5795	0.0649	0.8135	0.9230	0.7243	0.1768	0.8337	0.0237	0.9099	0.5271	0.4446	0.5688	0.1897	0.6642	0.0709	0.7551	0.7175	0.7440
77	0.3293	0.1251	0.7933	0.6176	0.2683	0.5346	0.3693	0.5331	0.0181	0.2805	0.7397	0.9618	0.8447	0.1794	0.9773	0.9602	0.9731	0.6823	0.0128	0.9258
78	0.0652	0.9838	0.4617	0.5622	0.8400	0.6345	0.6449	0.6037	0.1133	0.5418	0.7985	0.9017	0.2848	0.7521	0.1641	0.3135	0.9613	0.3782	0.7488	0.6530
79	0.9192	0.1755	0.4934	0.9169	0.4889	0.8808	0.5973	0.8731	0.4021	0.7300	0.5868	0.5621	0.3228	0.1539	0.2982	0.1131	0.6837	0.6909	0.6092	0.6800
80	0.3599	0.5328	0.1188	0.7354	0.3300	0.7343	0.1345	0.8282	0.4039	0.9426	0.6184	0.5593	0.2835	0.4028	0.4111	0.6763	0.9351	0.5491	0.0146	0.8687
81	0.6161	0.1653	0.6206	0.2232	0.7515	0.5096	0.9421	0.4847	0.1702	0.9030	0.8130	0.5485	0.4105	0.2295	0.4418	0.6566	0.8471	0.9508	0.0635	0.3982
82	0.5796	0.4016	0.0741	0.3600	0.2489	0.8673	0.2184	0.9103	0.8605	0.9399	0.1226	0.4040	0.2013	0.2796	0.8235	0.1333	0.1339	0.8406	0.9892	0.3472
83	0.3215	0.8868	0.6038	0.8110	0.5565	0.4338	0.3352	0.6682	0.3576	0.5102	0.6706	0.3868	0.8377	0.5732	0.1679	0.8735	0.8572	0.2213	0.2180	0.3427
84	0.5602	0.0173	0.3999	0.4352	0.7140	0.4794	0.2970	0.5664	0.3617	0.2694	0.1907	0.4170	0.0601	0.6798	0.9341	0.5178	0.8021	0.1992	0.3019	0.6480
85	0.9372	0.6589	0.9282	0.2983	0.7088	0.4070	0.6947	0.2557	0.0570	0.8775	0.5808	0.4147	0.2382	0.2087	0.4347	0.0738	0.7188	0.6080	0.0187	0.5629
86	0.3892	0.7718	0.7345	0.8721	0.5769	0.1898	0.5975	0.4881	0.7586	0.3839	0.0811	0.6715	0.9723	0.6164	0.4804	0.2820	0.7682	0.9307	0.1217	0.8480
87	0.2065	0.0765	0.9466	0.0772	0.9158	0.6097	0.9762	0.3629	0.6987	0.9973	0.1265	0.6523	0.2669	0.2031	0.8397	0.5006	0.7623	0.9954	0.9735	0.7704
88	0.7992	0.6325	0.6902	0.6895	0.5526	0.7721	0.4660	0.0517	0.4878	0.8039	0.2865	0.3418	0.7893	0.0839	0.2577	0.8982	0.9895	0.0358	0.1233	0.6721
89	0.2340	0.3265	0.9096	0.3970	0.4952	0.7245	0.2177	0.3874	0.0989	0.4196	0.8886	0.3815	0.7037	0.9487	0.1102	0.5633	0.7006	0.5581	0.7433	0.0071
90	0.3337	0.8152	0.1734	0.6126	0.4688	0.3318	0.7621	0.9503	0.6045	0.8306	0.9782	0.9869	0.4350	0.3698	0.4699	0.4236	0.2106	0.5698	0.6103	0.2894
91	0.4703	0.9472	0.9548	0.9946	0.7408	0.3305	0.0816	0.5943	0.2962	0.8129	0.8989	0.9750	0.4470	0.1229	0.5589	0.1433	0.3665	0.9938	0.6666	0.5107
92	0.8669	0.8504	0.0420	0.9482	0.7545	0.9114	0.9005	0.9224	0.3451	0.1089	0.9889	0.1810	0.7678	0.2699	0.8655	0.6891	0.8180	0.2737	0.5592	0.8177
93	0.2346	0.3801	0.2655	0.7637	0.7842	0.1301	0.0703	0.3258	0.1058	0.3000	0.1422	0.6673	0.6535	0.9290	0.0274	0.8054	0.9642	0.2479	0.3807	0.6894
94	0.2088	0.2786	0.3220	0.8361	0.2130	0.1551	0.6518	0.7365	0.7852	0.6064	0.7367	0.1382	0.6807	0.8698	0.4680	0.2867	0.0903	0.8587	0.2714	0.5058
95	0.8481	0.6247	0.5632	0.6675	0.3809	0.5411	0.9183	0.4527	0.9331	0.7709	0.8947	0.4610	0.6783	0.2274	0.9252	0.6667	0.3926	0.4410	0.8749	0.0946

iTeh Standards (https://standards.iteh.ai) Document Preview ASTM D3665-02

NOTICE: This standard has either been superseded and replaced by a new version or withdrawn. Contact ASTM International (www.astm.org) for the latest information.

TABLE 1 *Continued*

96	0.5504	0.3395	0.4908	0.5972	0.7803	0.8684	0.3251	0.5187	0.4900	0.6371	0.7024	0.3064	0.5083	0.0871	0.5272	0.4226	0.4925	0.2143	0.8181	0.4355
97	0.5011	0.9713	0.0759	0.3213	0.5479	0.0286	0.9488	0.0961	0.4072	0.4431	0.2600	0.2112	0.8159	0.4557	0.6106	0.1875	0.8278	0.0343	0.6772	0.0472
98	0.3330	0.3833	0.3011	0.3025	0.8370	0.3893	0.9858	0.3856	0.7198	0.8616	0.6686	0.3478	0.4228	0.9794	0.8507	0.9031	0.3429	0.4037	0.8527	0.1752
99	0.5283	0.6328	0.6261	0.0374	0.2622	0.2679	0.5403	0.5261	0.6574	0.7889	0.9112	0.6007	0.7442	0.8965	0.1240	0.1341	0.9045	0.9915	0.3114	0.5756
100	0.1383	0.2684	0.8603	0.8311	0.0448	0.1927	0.7452	0.3259	0.1688	0.4119	0.7062	0.0524	0.4555	0.3955	0.9094	0.4504	0.4275	0.6933	0.4719	0.6156

	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
1	0.4032	0.4317	0.5014	0.0457	0.1686	0.5467	0.1120	0.7830	0.8776	0.3841	0.0056	0.9343	0.8078	0.7761	0.7501	0.8744	0.6352	0.7163	0.6262	0.0904
2	0.4390	0.7072	0.8041	0.0212	0.2193	0.6384	0.1195	0.2257	0.9806	0.0122	0.6527	0.7766	0.3433	0.5381	0.1840	0.6884	0.6135	0.9519	0.5728	0.7015
3	0.0818	0.0315	0.8113	0.1197	0.2139	0.2159	0.6311	0.9797	0.5199	0.6258	0.3773	0.3156	0.8023	0.1036	0.8544	0.3203	0.0027	0.6928	0.6254	0.2959
4	0.1947	0.8558	0.1970	0.0629	0.2574	0.5385	0.4208	0.2080	0.4950	0.6278	0.8632	0.3817	0.1175	0.6310	0.5926	0.7785	0.7240	0.2243	0.9458	0.0222
5	0.1248	0.6276	0.1007	0.3949	0.6423	0.9369	0.8990	0.3603	0.1130	0.8708	0.1985	0.6505	0.7961	0.4665	0.1796	0.5279	0.3428	0.3967	0.3930	0.8946
6	0.1529	0.2969	0.6870	0.0275	0.8232	0.4281	0.6253	0.2908	0.0782	0.8077	0.3111	0.9679	0.5846	0.5322	0.4207	0.9047	0.0129	0.5527	0.0266	0.2568
7	0.3696	0.8613	0.9755	0.3533	0.4291	0.8383	0.8856	0.3622	0.7173	0.0320	0.0244	0.3604	0.1330	0.7560	0.8931	0.4479	0.8716	0.8221	0.7968	0.8446
8	0.6323	0.7710	0.4935	0.0235	0.0012	0.2665	0.1320	0.1581	0.2221	0.5604	0.7890	0.0846	0.7907	0.2483	0.0250	0.9591	0.3514	0.5500	0.4439	0.4102
9	0.2744	0.9018	0.9544	0.4817	0.8815	0.9585	0.3034	0.8083	0.0663	0.6612	0.6500	0.6158	0.7492	0.0532	0.3315	0.4517	0.0745	0.4435	0.1570	0.3997
10	0.0870	0.5560	0.8242	0.8141	0.4341	0.6577	0.2725	0.7486	0.7921	0.3865	0.2874	0.1738	0.3730	0.2961	0.9608	0.0684	0.8070	0.8262	0.2044	0.4159
11	0.3531	0.6654	0.0322	0.4803	0.9119	0.8124	0.8118	0.8450	0.6399	0.9193	0.4758	0.0830	0.0209	0.0938	0.0566	0.9242	0.9547	0.5785	0.5641	0.7603
12	0.5535	0.0732	0.0837	0.1736	0.3167	0.6651	0.8531	0.7212	0.1578	0.6737	0.4388	0.9864	0.6166	0.7713	0.2656	0.5284	0.9994	0.7788	0.3753	0.0270
13	0.0511	0.8869	0.2165	0.9620	0.7303	0.8778	0.6041	0.0013	0.4445	0.7966	0.0558	0.7758	0.9999	0.7727	0.3243	0.9857	0.5205	0.3754	0.2602	0.6855
14	0.9936	0.9937	0.3757	0.0804	0.6011	0.1544	0.1862	0.3084	0.4582	0.5755	0.4668	0.8810	0.4916	0.8495	0.5026	0.9600	0.6932	0.7305	0.5082	0.7963
15	0.5111	0.5606	0.6661	0.4822	0.0382	0.1129	0.4069	0.2616	0.1626	0.3340	0.7017	0.5916	0.7107	0.3506	0.0692	0.9675	0.3950	0.4629	0.8457	0.3864
16	0.5170	0.4137	0.5241	0.3687	0.0461	0.2090	0.9963	0.6022	0.7058	0.5408	0.2832	0.8861	0.5468	0.6065	0.7994	0.5520	0.6784	0.3162	0.5776	0.4607
17	0.7162	0.7211	0.3829	0.1011	0.4941	0.8419	0.3845	0.2639	0.2845	0.8169	0.4938	0.7826	0.6641	0.9902	0.0540	0.3522	0.7786	0.3835	0.3249	0.4098
18	0.6906	0.5291	0.4232	0.5618	0.1201	0.3108	0.1820	0.6419	0.6096	0.5941	0.8703	0.1108	0.4186	0.8801	0.9614	0.5711	0.3729	0.1642	0.1623	0.6400
19	0.1795	0.5164	0.4279	0.4937	0.1215	0.1446	0.3175	0.8212	0.2745	0.4897	0.1520	0.6287	0.6475	0.9411	0.8351	0.4521	0.4530	0.7675	0.8770	0.2050
20	0.6329	0.0149	0.2117	0.5415	0.5398	0.4041	0.4784	0.4287	0.0998	0.0062	0.6914	0.9561	0.7292	0.3132	0.3796	0.5874	0.0084	0.9870	0.0124	0.2922
21	0.3879	0.8954	0.3051	0.1453	0.8305	0.9658	0.6757	0.1835	0.0640	0.7774	0.9366	0.3082	0.9957	0.5176	0.2383	0.2116	0.5016	0.2603	0.3180	0.2950
22	0.6307	0.3722	0.4973	0.1390	0.0631	0.6468	0.0236	0.7142	0.6375	0.2472	0.1379	0.9490	0.5861	0.9531	0.5748	0.3657	0.0754	0.7787	0.2708	0.5323
23	0.1122	0.1361	0.4686	0.8273	0.4289	0.7509	0.0673	0.0929	0.0217	0.5347	0.8884	0.2819	0.8829	0.5935	0.6814	0.0445	0.3309	0.6938	0.5393	0.5977
24	0.8048	0.1365	0.5080	0.7480	0.1517	0.2677	0.3511	0.8836	0.8367	0.9527	0.2666	0.5609	0.9855	0.0977	0.4747	0.6899	0.5268	0.6944	0.8604	0.0975
25	0.6537	0.7856	0.4160	0.4690	0.2362	0.8127	0.2670	0.7451	0.2561	0.8517	0.3189	0.2482	0.7094	0.6313	0.3121	0.9824	0.4217	0.2937	0.0118	0.0380
26	0.9353	0.8393	0.8171	0.3127	0.5063	0.8849	0.9149	0.4416	0.1561	0.3889	0.7368	0.7089	0.2712	0.1498	0.4714	0.9293	0.5569	0.2596	0.1288	0.8960
27	0.9400	0.2036	0.5127	0.6694	0.4093	0.0667	0.8332	0.0969	0.7207	0.8182	0.4460	0.6539	0.1400	0.4634	0.8827	0.2551	0.2661	0.9078	0.8573	0.1192
28	0.2239	0.4029	0.3063	0.4398	0.7552	0.2757	0.2926	0.1656	0.4827	0.4384	0.9593	0.8218	0.0005	0.7715	0.4100	0.4190	0.7591	0.6785	0.5402	0.2570
29	0.2876	0.9702	0.9232	0.4473	0.7585	0.0533	0.3639	0.1608	0.5327	0.6304	0.0715	0.6877	0.4894	0.3257	0.2853	0.6597	0.1596	0.0289	0.8314	0.0384
30	0.0227	0.6122	0.3334	0.9033	0.4106	0.1189	0.3207	0.0103	0.3849	0.0636	0.8319	0.7542	0.3109	0.4716	0.7307	0.7821	0.8267	0.0790	0.2227	0.7906
31	0.6717	0.4566	0.2084	0.0065	0.5738	0.1802	0.0117	0.9153	0.6812	0.5234	0.4880	0.5455	0.2228	0.7150	0.0078	0.6183	0.6207	0.6975	0.8321	0.9155
32	0.2266	0.1962	0.4700	0.8862	0.5265	0.6863	0.6008	0.7971	0.5203	0.5042	0.7600	0.0522	0.7091	0.2842	0.0319	0.3014	0.6120	0.6599	0.7167	0.1202
33	0.9701	0.6054	0.3389	0.1003	0.9371	0.9075	0.3569	0.3707	0.7032	0.0607	0.6004	0.9766	0.8923	0.0656	0.4578	0.1785	0.7679	0.8126	0.7093	0.0197
34	0.7918	0.8516	0.5097	0.9952	0.0521	0.8701	0.9980	0.3959	0.3884	0.1472	0.0907	0.6432	0.2980	0.8320	0.9818	0.0432	0.2885	0.6705	0.0396	0.6610
35	0.9393	0.4509	0.4913	0.4492	0.6892	0.3479	0.4775	0.2395	0.9688	0.7417	0.5616	0.4407	0.3092	0.2399	0.4183	0.0793	0.2173	0.5495	0.4345	0.7998
36	0.8219	0.2727	0.3934	0.6346	0.4340	0.7053	0.1407	0.8595	0.9318	0.7281	0.2686	0.2663	0.2738	0.1017	0.0643	0.8061	0.9374	0.6875	0.0131	0.0405
37	0.6559	0.4027	0.7634	0.1451	0.3670	0.6286	0.7511	0.3060	0.5211	0.1018	0.1377	0.1186	0.7478	0.5372	0.3119	0.4400	0.8366	0.9340	0.7908	0.3567
38	0.3882	0.4816	0.5613	0.3277	0.0584	0.7067	0.3786	0.7016	0.6198	0.7428	0.4598	0.9161	0.5270	0.5028	0.3269	0.8853	0.5043	0.0353	0.2536	0.9726
39	0.6865	0.5929	0.2014	0.4038	0.8234	0.5155	0.6427	0.1415	0.9506	0.7674	0.1044	0.1156	0.1486	0.8583	0.0699	0.1919	0.4507	0.3152	0.7726	0.1055
40	0.3980	0.8975	0.7476	0.7936	0.7941	0.3924	0.2102	0.2098	0.5498	0.7827	0.2385	0.5623	0.3768	0.8885	0.5660	0.0927	0.1878	0.0050	0.4181	0.0413
41	0.5157	0.2668	0.5693	0.0309	0.6246	0.7859	0.6927	0.9676	0.5954	0.3224	0.4580	0.1928	0.6716	0.5335	0.6360	0.4625	0.6069	0.7174	0.4476	0.0327
42	0.3790	0.4076	0.8277	0.6199	0.2223	0.3498	0.0442	0.5037	0.3043	0.0359	0.1629	0.4903	0.1357	0.3394	0.5525	0.7708	0.9525	0.3632	0.3101	0.3248

NOTICE: This standard has either been superseded and replaced by a new version or withdrawn. Contact ASTM International (www.astm.org) for the latest information.

TABLE 1 *Continued*

43	0.7620	0.9737	0.7215	0.0596	0.4211	0.3643	0.4587	0.6826	0.4991	0.0965	0.4314	0.5094	0.2949	0.1478	0.8760	0.1311	0.9831	0.9791	0.6405	0.9681
44	0.1825	0.9300	0.4214	0.0843	0.4626	0.9154	0.5221	0.4346	0.2733	0.9212	0.9498	0.1730	0.8363	0.4360	0.2350	0.8295	0.3343	0.4113	0.1149	0.2985
45	0.0789	0.9961	0.5826	0.7863	0.8034	0.9480	0.0690	0.9538	0.5933	0.2645	0.3886	0.3341	0.3715	0.8093	0.2429	0.8376	0.9558	0.8564	0.9485	0.6698
46	0.5355	0.5392	0.7265	0.3820	0.6130	0.3130	0.4174	0.7168	0.6565	0.4015	0.9793	0.9406	0.0073	0.4391	0.4581	0.3836	0.7686	0.7870	0.9590	0.7806
47	0.4515	0.1126	0.5065	0.2270	0.7071	0.1665	0.1565	0.7043	0.7134	0.4946	0.0893	0.0092	0.2689	0.4382	0.7277	0.9629	0.2824	0.8513	0.7769	0.1258
48	0.5054	0.9179	0.6087	0.1807	0.3794	0.0030	0.7508	0.3936	0.1563	0.4761	0.1826	0.8015	0.1949	0.8074	0.6656	0.1205	0.5441	0.8705	0.6483	0.9195
49	0.4075	0.0393	0.6079	0.1812	0.6114	0.6178	0.7278	0.7481	0.1155	0.4377	0.2685	0.6725	0.2245	0.4343	0.9928	0.1280	0.4440	0.9696	0.5510	0.3452
50	0.9781	0.5989	0.6904	0.2376	0.1312	0.6301	0.4422	0.5215	0.1062	0.8904	0.3118	0.9440	0.7378	0.2314	0.3102	0.5067	0.3840	0.5004	0.0867	0.2201
51	0.4970	0.0686	0.6734	0.2707	0.9511	0.9828	0.4839	0.6150	0.4910	0.7407	0.0959	0.1374	0.9827	0.2510	0.4962	0.2004	0.6424	0.5494	0.6060	0.8185
52	0.0866	0.8830	0.9509	0.6601	0.9086	0.7602	0.2284	0.8046	0.3951	0.8299	0.9771	0.5376	0.1586	0.6513	0.5118	0.9965	0.9747	0.3039	0.4286	0.9060
53	0.2998	0.2033	0.9361	0.7179	0.6801	0.7087	0.4107	0.4785	0.0338	0.3944	0.2074	0.3685	0.0932	0.7095	0.1060	0.3527	0.4068	0.0681	0.9573	0.4567
54	0.9995	0.2579	0.1449	0.4519	0.5341	0.5400	0.0305	0.0993	0.3375	0.4858	0.0767	0.3548	0.5135	0.4890	0.2041	0.1236	0.4738	0.6751	0.2973	0.2453
55	0.2875	0.8239	0.9550	0.8685	0.7366	0.4929	0.6508	0.4575	0.4306	0.7530	0.6271	0.2624	0.8766	0.2144	0.7752	0.2664	0.5227	0.3475	0.6454	0.6027
56	0.7744	0.8738	0.6410	0.2766	0.4167	0.7447	0.4421	0.8200	0.0911	0.1918	0.7919	0.3923	0.6995	0.4841	0.8088	0.9671	0.5252	0.7098	0.0773	0.3515
57	0.2190	0.9507	0.7369	0.7069	0.8026	0.5224	0.5936	0.6252	0.2430	0.7295	0.5426	0.8208	0.7099	0.5528	0.9950	0.6529	0.3536	0.8496	0.5964	0.6991
58	0.3572	0.0386	0.0604	0.5086	0.1137	0.2813	0.7213	0.4052	0.6885	0.7022	0.6949	0.9898	0.3532	0.8499	0.7351	0.9008	0.7007	0.2759	0.5137	0.5457
59	0.4203	0.2039	0.6619	0.6296	0.6964	0.5694	0.3744	0.4801	0.6115	0.2319	0.3233	0.4104	0.9883	0.3962	0.6002	0.3421	0.9004	0.1978	0.7164	0.2006
60	0.3852	0.8575	0.3556	0.1719	0.9084	0.1519	0.5746	0.8501	0.7047	0.0968	0.0052	0.2592	0.5568	0.2110	0.4898	0.1143	0.4169	0.8942	0.0465	0.5638
61	0.8188	0.8797	0.2189	0.7505	0.4091	0.0746	0.9380	0.4851	0.6324	0.1161	0.9039	0.5174	0.2005	0.4795	0.9108	0.6239	0.8096	0.4277	0.4493	0.9989
62	0.2222	0.2611	0.6572	0.8338	0.1860	0.5882	0.9201	0.8918	0.8173	0.5117	0.1740	0.6907	0.6259	0.4125	0.1228	0.3093	0.4588	0.6900	0.4297	0.5706
63	0.8915	0.0972	0.4237	0.7628	0.9373	0.3372	0.5366	0.7375	0.7250	0.0505	0.7794	0.6088	0.5326	0.9316	0.4153	0.0761	0.3446	0.2628	0.1542	0.2263
64	0.3538	0.2774	0.2357	0.0924	0.9106	0.6775	0.7431	0.0363	0.2660	0.8256	0.0942	0.1207	0.3958	0.7775	0.7103	0.8784	0.9515	0.5645	0.5844	0.7385
65	0.2530	0.2402	0.0294	0.2248	0.5812	0.6073	0.1290	0.2662	0.4448	0.5572	0.5474	0.1756	0.9499	0.2062	0.0147	0.3122	0.5998	0.7324	0.2100	0.8565
66	0.4071	0.4842	0.8629	0.1376	0.5034	0.6827	0.1170	0.6243	0.3775	0.7851	0.8008	0.8080	0.6733	0.0530	0.1037	0.6648	0.7386	0.4086	0.2452	0.6205
67	0.8345	0.4357	0.3540	0.2538	0.3255	0.7046	0.6524	0.0954	0.6137	0.6245	0.2461	0.8730	0.1787	0.0879	0.7318	0.8092	0.2877	0.3227	0.4243	0.2361
68	0.5757	0.2145	0.9082	0.7564	0.0278	0.4141	0.7820	0.7118	0.0021	0.3626	0.9811	0.1441	0.1006	0.9171	0.5045	0.6001	0.0550	0.8949	0.4336	0.6302
69	0.4771	0.4272	0.5959	0.4767	0.4256	0.4142	0.1177	0.8357	0.5324	0.3672	0.6739	0.9933	0.8620	0.5986	0.7340	0.5626	0.2166	0.6138	0.8030	0.6250
70	0.8720	0.8696	0.1655	0.5784	0.6499	0.2776	0.9633	0.7313	0.0447	0.4912	0.1945	0.6848	0.6125	0.8523	0.0498	0.2335	0.2610	0.2022	0.3245	0.6773
71	0.1957	0.5619	0.9611	0.4220	0.4593	0.2400	0.7886	0.6671	0.8284	0.1475	0.0199	0.5886	0.4552	0.6989	0.3149	0.7790	0.4545	0.9012	0.6490	0.4696
72	0.1244	0.4777	0.4444	0.5191	0.6314	0.3918	0.9981	0.9052	0.7269	0.2810	0.9942	0.7306	0.4212	0.5659	0.8584	0.7257	0.4090	0.9278	0.6924	0.3486
73	0.9978	0.8888	0.7930	0.9129	0.9218	0.2553	0.8241	0.1813	0.1509	0.8843	0.0379	0.8346	0.6085	0.2032	0.0089	0.5450	0.9699	0.0219	0.7063	0.4879
74	0.3960	0.8718	0.6388	0.9467	0.2216	0.0189	0.2101	0.9448	0.4278	0.2353	0.0805	0.3225	0.9830	0.8017	0.9335	0.7003	0.8691	0.2089	0.5650	0.3410
75	0.9877	0.0702	0.6532	0.4654	0.5212	0.6401	0.2838	0.4423	0.5781	0.9984	0.4619	0.9587	0.5172	0.7647	0.3416	0.0337	0.4862	0.4292	0.3100	0.3415
76	0.4955	0.2659	0.6638	0.9102	0.3825	0.9140	0.3008	0.7999	0.2164	0.4311	0.4059	0.5168	0.0921	0.7023	0.6593	0.3229	0.5294	0.6957	0.1051	0.0567
77	0.5263	0.6958	0.1386	0.0884	0.4542	0.5719	0.7810	0.7703	0.2511	0.4953	0.7763	0.0755	0.3383	0.6351	0.1513	0.6308	0.2755	0.1989	0.7807	0.2183
78	0.5486	0.6437	0.4412	0.8138	0.5802	0.5981	0.1762	0.2104	0.7877	0.0175	0.9384	0.3908	0.1652	0.7665	0.6003	0.9996	0.6376	0.7347	0.7778	0.5507
79	0.7076	0.1880	0.3095	0.5585	0.8156	0.0739	0.7057	0.8670	0.3813	0.3173	0.4867	0.6019	0.0328	0.0626	0.4628	0.9878	0.0402	0.8847	0.0822	0.8101
80	0.2996	0.9323	0.5580	0.5019	0.0231	0.8889	0.9759	0.6771	0.4602	0.2621	0.4524	0.3954	0.7846	0.1081	0.8848	0.1700	0.7082	0.5995	0.5743	0.2742
81	0.2710	0.3076	0.3373	0.2992	0.8715	0.2526	0.0088	0.3975	0.8709	0.4481	0.9014	0.2320	0.7510	0.3706	0.5928	0.2253	0.5360	0.2381	0.3676	0.0840
82	0.9692	0.9672	0.9785	0.8654	0.9020	0.6830	0.6108	0.3183	0.2955	0.3743	0.0428	0.0873	0.7829	0.2392	0.9543	0.4472	0.4743	0.5394	0.5483	0.9001
83	0.6541	0.7676	0.7261	0.7126	0.6880	0.9852	0.6134	0.0025	0.4759	0.3346	0.1689	0.7494	0.5237	0.1856	0.3077	0.8881	0.5305	0.3912	0.0136	0.4163
84	0.8533	0.6540	0.5828	0.1692	0.3374	0.2566	0.2952	0.8002	0.2966	0.4089	0.5827	0.3316	0.7833	0.9040	0.3387	0.6704	0.8880	0.5678	0.8748	0.6090
85	0.8301	0.1315	0.9776	0.5927	0.8122	0.9875	0.4964	0.0407	0.3400	0.4642	0.8935	0.4018	0.3974	0.4161	0.2262	0.8822	0.6363	0.4155	0.6052	0.3456
86	0.0423	0.6645	0.8791	0.8341	0.9551	0.1443	0.8016	0.6368	0.9046	0.6221	0.9622	0.8214	0.7358	0.3577	0.2434	0.8497	0.1173	0.6016	0.1753	0.8440
87	0.2172	0.1965	0.3442	0.2903	0.7435	0.3235	0.7878	0.6357	0.3788	0.4695	0.6551	0.3780	0.6143	0.2373	0.4781	0.8713	0.7105	0.4689	0.7189	0.9925
88	0.7330	0.6962	0.9564	0.7404	0.7400	0.3899	0.9896	0.0909	0.7687	0.9486	0.2625	0.5673	0.5712	0.7159	0.3987	0.3199	0.8638	0.2051	0.9000	0.6803
89	0.3858	0.3398	0.0057	0.1153	0.4865	0.0478	0.5739	0.2207	0.1901	0.7822	0.4425	0.1850	0.8642	0.0210	0.1660	0.6519	0.0111	0.5166	0.7203	0.6872
90	0.4838	0.1272	0.8111	0.1764	0.9468	0.6974	0.0499	0.7532	0.9147	0.9532	0.8854	0.8399	0.2413	0.3961	0.2916	0.6845	0.3062	0.7255	0.9592	0.8488

iTeh Standards
(https://standards.iteh.ai)
Document Preview
ASTM D3665-02

NOTICE: This standard has either been superseded and replaced by a new version or withdrawn. Contact ASTM International (www.astm.org) for the latest information.

TABLE 1 *Continued*

91	0.7322	0.5000	0.3806	0.3644	0.2113	0.3902	0.3978	0.5716	0.9275	0.3701	0.3274	0.1549	0.6609	0.2957	0.3897	0.8493	0.9805	0.5367	0.2187	0.2893
92	0.6281	0.7065	0.7353	0.6941	0.6354	0.9825	0.5583	0.1485	0.5175	0.7491	0.8679	0.3583	0.6290	0.0728	0.5814	0.0207	0.7613	0.1141	0.9822	0.4496
93	0.9029	0.7845	0.6488	0.9231	0.3890	0.7920	0.6035	0.6905	0.2467	0.3502	0.7698	0.1631	0.4603	0.1765	0.6614	0.9610	0.9167	0.3705	0.0689	0.5169
94	0.0821	0.8707	0.0427	0.6764	0.3660	0.4701	0.2753	0.6182	0.2831	0.9774	0.5460	0.7201	0.3131	0.3278	0.1148	0.8172	0.6874	0.3655	0.6128	0.6646
95	0.4330	0.3787	0.3163	0.4432	0.6718	0.4512	0.9210	0.6277	0.0682	0.5370	0.5798	0.2563	0.5239	0.5027	0.4548	0.7970	0.3590	0.5630	0.7479	0.3147
96	0.6786	0.1128	0.5480	0.3401	0.4451	0.3585	0.5770	0.4395	0.5824	0.9836	0.8334	0.4663	0.6616	0.9268	0.5579	0.0926	0.0293	0.6083	0.9650	0.0541
97	0.6769	0.8477	0.3126	0.2555	0.9176	0.6926	0.9884	0.2306	0.9346	0.0369	0.1111	0.2237	0.9546	0.0575	0.0484	0.1727	0.5119	0.8415	0.4644	0.4814
98	0.4917	0.8389	0.2963	0.3342	0.0104	0.9694	0.0114	0.7720	0.4202	0.5999	0.3430	0.1948	0.6342	0.8798	0.0546	0.8874	0.5235	0.7297	0.2836	0.0108
99	0.2803	0.7395	0.7598	0.2525	0.9576	0.6006	0.8924	0.9266	0.2355	0.0678	0.4488	0.6047	0.6285	0.4056	0.6912	0.5750	0.2366	0.5670	0.3244	0.8838
100	0.2289	0.7760	0.0180	0.7002	0.0806	0.6596	0.8104	0.2837	0.4968	0.0441	0.8907	0.4066	0.5966	0.7723	0.1822	0.4840	0.0001	0.4821	0.6144	0.9916

	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
1	0.6241	0.5620	0.8967	0.2393	0.1313	0.7516	0.4120	0.1889	0.4108	0.5931	0.5101	0.8903	0.1026	0.3314	0.8313	0.8547	0.9217	0.5666	0.2055	0.0487
2	0.7770	0.6555	0.8809	0.9477	0.3306	0.8645	0.5092	0.1140	0.2752	0.1763	0.0510	0.6348	0.9841	0.0744	0.4198	0.8617	0.0671	0.0638	0.4731	0.9756
3	0.1256	0.9330	0.8461	0.5600	0.7219	0.9886	0.0515	0.5002	0.2026	0.9134	0.5339	0.3625	0.9410	0.2415	0.9188	0.0934	0.7169	0.9784	0.1913	0.6113
4	0.2001	0.0168	0.4084	0.6396	0.5396	0.3703	0.0153	0.1076	0.5046	0.9615	0.7059	0.0332	0.4614	0.2503	0.6618	0.4864	0.3054	0.2331	0.6590	0.9540
5	0.6194	0.5231	0.8763	0.0896	0.5088	0.6552	0.4417	0.0252	0.3682	0.1571	0.4790	0.0357	0.9874	0.0935	0.4259	0.5685	0.9026	0.0185	0.1264	0.5204
6	0.4537	0.3208	0.8825	0.7640	0.1460	0.4595	0.6012	0.5681	0.6316	0.0888	0.1864	0.5793	0.3182	0.4114	0.9882	0.8668	0.5764	0.4162	0.4329	0.2436
7	0.0017	0.5124	0.1447	0.4324	0.6127	0.3336	0.5544	0.0373	0.9249	0.0125	0.1712	0.9634	0.4449	0.5555	0.5550	0.1847	0.8011	0.6711	0.1049	0.3462
8	0.9328	0.7671	0.5749	0.3609	0.5834	0.7964	0.5152	0.5946	0.0271	0.9496	0.3998	0.6109	0.3721	0.1160	0.2185	0.9668	0.1005	0.9510	0.4254	0.4255
9	0.5734	0.7044	0.2420	0.6578	0.7116	0.3846	0.9815	0.3230	0.1845	0.5134	0.7160	0.4376	0.1000	0.2318	0.8568	0.3931	0.1139	0.7170	0.5676	0.2293
10	0.4251	0.1241	0.7815	0.5811	0.2194	0.0029	0.2244	0.5735	0.0069	0.3160	0.4138	0.0042	0.3606	0.1134	0.8364	0.7706	0.7254	0.0205	0.9559	0.4121
11	0.7777	0.8436	0.3089	0.1811	0.5647	0.6039	0.1424	0.4987	0.0313	0.1516	0.4257	0.7975	0.8742	0.8831	0.5036	0.0064	0.9043	0.5371	0.0436	0.4971
12	0.7767	0.9856	0.4242	0.0720	0.7543	0.2348	0.4010	0.3357	0.9751	0.8938	0.3996	0.7052	0.6512	0.8328	0.9151	0.4869	0.0385	0.8826	0.1612	0.6730
13	0.6817	0.5554	0.8789	0.6046	0.7187	0.3634	0.9842	0.9116	0.4661	0.9184	0.4426	0.4465	0.9304	0.9758	0.0982	0.6049	0.0272	0.6515	0.0835	0.1568
14	0.1106	0.4667	0.0471	0.0458	0.9056	0.4241	0.1967	0.1931	0.9560	0.8795	0.0041	0.5687	0.1329	0.8589	0.7104	0.2275	0.8444	0.2773	0.2015	0.6679
15	0.3580	0.7102	0.8418	0.0298	0.0072	0.5243	0.8912	0.1723	0.0333	0.8752	0.9302	0.8028	0.2132	0.0786	0.8649	0.5691	0.0556	0.9808	0.1479	0.1993
16	0.5762	0.3295	0.5153	0.6992	0.0852	0.0351	0.6825	0.3977	0.1996	0.3528	0.6170	0.5099	0.5029	0.9063	0.0953	0.4194	0.6506	0.1484	0.3120	0.7405
17	0.5443	0.8463	0.9125	0.0578	0.3080	0.5991	0.1658	0.4369	0.1070	0.2993	0.4304	0.0241	0.0588	0.1935	0.3740	0.5160	0.2569	0.4583	0.0283	0.0711
18	0.4501	0.0481	0.3068	0.1487	0.6579	0.3943	0.0347	0.4883	0.9451	0.5909	0.3574	0.1683	0.9542	0.0611	0.9619	0.9670	0.4310	0.4978	0.2682	0.0164
19	0.8255	0.9492	0.5085	0.7882	0.2781	0.1110	0.6564	0.6864	0.1690	0.8727	0.9429	0.5225	0.6550	0.4824	0.7631	0.1853	0.7981	0.4436	0.8950	0.1425
20	0.9142	0.8963	0.4149	0.9715	0.8828	0.2816	0.8238	0.6546	0.4620	0.4632	0.7054	0.6567	0.8302	0.9768	0.7844	0.0387	0.0512	0.2209	0.9175	0.4092
21	0.8811	0.0026	0.5075	0.3850	0.5578	0.7396	0.4381	0.1039	0.8732	0.5146	0.8623	0.9991	0.7247	0.4652	0.7382	0.7522	0.9962	0.8900	0.5240	0.9023
22	0.5300	0.4331	0.8525	0.8254	0.2097	0.3422	0.8102	0.2562	0.5845	0.3717	0.5529	0.2560	0.0172	0.0614	0.1252	0.4516	0.5856	0.7947	0.6169	0.9132
23	0.6382	0.1454	0.1591	0.5337	0.3143	0.4000	0.3466	0.1657	0.9069	0.4063	0.1078	0.0416	0.5774	0.7989	0.1220	0.9423	0.1182	0.6628	0.9669	0.8641
24	0.8585	0.3381	0.5428	0.7525	0.0468	0.3404	0.9872	0.4592	0.6155	0.3594	0.6412	0.1397	0.5039	0.5842	0.2690	0.5076	0.1585	0.1716	0.2071	0.1211
25	0.8292	0.8901	0.1024	0.6306	0.4055	0.1991	0.5953	0.5295	0.6953	0.1914	0.5640	0.1681	0.0527	0.4813	0.1602	0.9990	0.7997	0.8800	0.3344	0.7737
26	0.9097	0.2235	0.6171	0.5472	0.3870	0.7132	0.9920	0.8926	0.2716	0.2646	0.4600	0.6497	0.2261	0.9223	0.6416	0.1045	0.7114	0.5038	0.0362	0.9022
27	0.7294	0.3750	0.7925	0.4394	0.7266	0.5969	0.7857	0.3984	0.1059	0.9403	0.1552	0.4755	0.6021	0.8833	0.9213	0.8157	0.6440	0.9926	0.7995	0.8894
28	0.0691	0.5247	0.9921	0.5766	0.9260	0.4886	0.9772	0.6218	0.9497	0.3450	0.8443	0.6936	0.0038	0.4511	0.8995	0.9621	0.1894	0.6603	0.9388	0.7875
29	0.2930	0.1310	0.7471	0.4122	0.5012	0.1411	0.3691	0.0523	0.0232	0.9454	0.2850	0.4874	0.9011	0.0580	0.3588	0.9204	0.8818	0.6043	0.8414	0.5116
30	0.3499	0.6659	0.8659	0.9802	0.6394	0.0221	0.7131	0.5363	0.4316	0.1157	0.7702	0.6702	0.3112	0.5980	0.5669	0.2468	0.8132	0.4295	0.2862	0.2598
31	0.2043	0.7977	0.3688	0.7445	0.0991	0.1632	0.6467	0.1724	0.4238	0.9416	0.0723	0.5559	0.0756	0.3188	0.0869	0.5464	0.0627	0.3391	0.6187	0.8594
32	0.1023	0.8140	0.8005	0.6897	0.3145	0.9010	0.7793	0.2775	0.0412	0.5232	0.5461	0.6685	0.2020	0.0435	0.3869	0.3965	0.4302	0.6913	0.7692	0.1147
33	0.9315	0.2394	0.4413	0.2407	0.2206	0.7666	0.0777	0.0983	0.8073	0.7799	0.7901	0.4828	0.9013	0.9226	0.8250	0.9236	0.8574	0.3828	0.7239	0.4064
34	0.2076	0.1672	0.0735	0.9041	0.5521	0.1067	0.0239	0.6238	0.4904	0.1468	0.6020	0.2706	0.5260	0.9900	0.6403	0.8103	0.9021	0.2308	0.0985	0.4641
35	0.4825	0.8486	0.7469	0.1434	0.3003	0.0625	0.5851	0.4994	0.7390	0.8792	0.2588	0.5892	0.5582	0.0443	0.5349	0.8969	0.1553	0.9956	0.1403	0.9575
36	0.4736	0.1278	0.6806	0.6409	0.8467	0.0308	0.7816	0.2360	0.1953	0.2035	0.3067	0.2518	0.9718	0.2544	0.6367	0.3001	0.1900	0.7610	0.2722	0.4670
37	0.1769	0.6168	0.5320	0.4772	0.9284	0.3261	0.5359	0.4576	0.5558	0.1828	0.3129	0.0316	0.4796	0.2794	0.5303	0.1069	0.7656	0.6695	0.4386	0.9535
38	0.7001	0.0559	0.1097	0.7597	0.1014	0.2111	0.2170	0.0688	0.8971	0.0851	0.9796	0.1839	0.0610	0.0297	0.7143	0.2131	0.9274	0.0075	0.6950	0.6615

iTeh Standards
(https://standards.iteh.ai)
Document Preview
ASTM D3665-02
https://standards.iteh.ai/catalog/standards/sist/0d1ad4ad-ad3e-414a-f5161323/astm-d3665-0