

RO4350® / Thermoset PCB Material

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Recommended Drill Series: 100, 150, 560, 580

Drill Size	Diameter (inch)	Feed (inch/min)	Speed (k-rpm)	Retract (inch/min)	Z-Axis Offset (inches)	Max Hits	Chipload (mm/rev)	SFM
0.10mm	0.0040	40	120	100	-0.011	100	0.33	126
0.13mm	0.0050	46	120	100	-0.011	100	0.38	157
0.15mm	0.0059	53	120	150	-0.011	150	0.44	185
#96	0.0063	60	120	150	-0.011	150	0.50	198
#95	0.0067	67	120	200	-0.012	200	0.56	210
#94	0.0071	73	120	200	-0.012	200	0.61	223
#93	0.0075	78	120	250	-0.012	200	0.65	236
#92	0.0079	84	120	250	-0.012	200	0.70	248
#91	0.0083	90	120	250	-0.012	250	0.75	261
#90	0.0087	96	120	300	-0.012	250	0.80	273
#89	0.0091	102	120	300	-0.012	250	0.85	286
#88	0.0095	104	120	300	-0.012	250	0.87	298
0.25mm	0.0098	105	120	300	-0.012	300	0.88	308
#87	0.0100	108	120	300	-0.012	300	0.90	314
#86	0.0105	110	120	300	-0.012	300	0.92	330
#85	0.0110	112	120	400	-0.013	350	0.93	345
#84	0.0115	113	116	400	-0.013	350	0.97	350
0.30mm	0.0118	113	113	400	-0.013	350	1.00	350
#83	0.0120	115	111	400	-0.013	350	1.04	350
#82	0.0125	116	107	400	-0.013	400	1.08	350
#81	0.0130	117	103	400	-0.013	400	1.14	350
#80	0.0135	119	99	400	-0.013	400	1.20	350
0.35mm	0.0138	119	97	400	-0.013	400	1.23	350
#79	0.0145	120	92	400	-0.013	400	1.30	350
1/64	0.0156	120	86	400	-0.014	400	1.40	350
0.40mm	0.0158	121	85	400	-0.014	400	1.42	350
#78	0.0160	124	84	400	-0.014	400	1.48	350
0.45mm	0.0177	126	76	500	-0.014	500	1.66	350
#77	0.0180	128	74	500	-0.014	500	1.73	350
0.50mm	0.0197	132	68	500	-0.015	500	1.94	350
#76	0.0200	134	67	500	-0.015	500	2.00	350
#75	0.0210	136	64	500	-0.015	500	2.13	350
0.55mm	0.0217	138	61	500	-0.015	500	2.26	350
#74	0.0225	140	59	500	-0.015	500	2.37	350
0.60mm	0.0236	144	57	500	-0.016	500	2.53	350
#73	0.0240	146	56	500	-0.016	600	2.61	350
#72	0.0250	148	54	500	-0.016	600	2.74	350
0.65mm	0.0256	150	52	500	-0.016	600	2.88	350
#71	0.0260	150	51	500	-0.016	600	2.94	350
0.70mm	0.0276	150	48	500	-0.016	600	3.13	350
#70	0.0280	150	48	500	-0.017	800	3.13	350
#69	0.0292	148	46	500	-0.017	800	3.22	350
0.75mm	0.0295	146	45	500	-0.017	800	3.24	350
#68	0.0310	140	43	500	-0.017	800	2.50	350
1/32	0.0312	140	43	500	-0.017	800	2.50	350
0.80mm	0.0315	137	42	500	-0.017	800	2.50	350
#67	0.0320	137	42	500	-0.017	800	2.50	350
#66	0.0330	133	41	500	-0.018	1000	2.50	350
0.85mm	0.0335	130	40	500	-0.018	1000	2.50	350
#65	0.0350	124	38	500	-0.018	1000	2.50	350
0.90mm	0.0354	124	38	500	-0.018	1000	2.50	350
#64	0.0360	120	37	500	-0.018	1000	2.50	350
#63	0.0370	117	36	500	-0.019	1000	2.50	350
0.95mm	0.0374	117	36	500	-0.019	1000	2.50	350
#62	0.0380	114	35	500	-0.019	1000	2.50	350
#61	0.0390	111	34	500	-0.019	1000	2.50	350
1.00mm	0.0394	111	34	500	-0.019	1000	2.50	350
#60	0.0400	107	33	500	-0.019	1000	2.50	350
#59	0.0410	107	33	500	-0.020	1000	2.50	350
1.05mm	0.0413	104	32	500	-0.020	1000	2.50	350
#58	0.0420	104	32	500	-0.020	1000	2.50	350
#57	0.0430	101	31	500	-0.020	1000	2.50	350
1.10mm	0.0433	101	31	500	-0.020	1000	2.50	350
1.15mm	0.0453	98	30	500	-0.021	1000	2.50	350

Note: This information is based on 120K RPM Spindle Capability. Please use maximum spindle speed if listed RPM is unattainable

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Drill Size	Diameter (inch)	Feed (inch/min)	Speed (k-rpm)	Retract (inch/min)	Z-Axis Offset (inches)	Max Hits	Chipload (mm/rev)	SFM
#56	0.0465	94	29	500	-0.021	1000	2.50	350
3/64	0.0469	94	29	500	-0.021	1000	2.50	350
1.20mm	0.0472	91	28	500	-0.021	1000	2.50	350
1.25mm	0.0492	88	27	500	-0.021	1000	2.50	350
1.30mm	0.0512	85	26	500	-0.022	1000	2.50	350
#55	0.0520	85	26	500	-0.022	1000	2.50	350
1.35mm	0.0531	81	25	500	-0.022	1000	2.50	350
#54	0.0550	78	24	500	-0.023	1000	2.50	350
1.40mm	0.0551	78	24	500	-0.023	1000	2.50	350
1.45mm	0.0571	75	23	500	-0.023	1000	2.50	350
1.50mm	0.0591	75	23	500	-0.024	1000	2.50	350
#53	0.0595	72	22	500	-0.024	1000	2.50	350
1.55mm	0.0610	72	22	500	-0.024	1000	2.50	350
1/16	0.0625	68	21	500	-0.025	1000	2.50	350
1.60mm	0.0630	68	21	500	-0.025	1000	2.50	350
#52	0.0635	68	21	500	-0.025	1000	2.50	350
1.65mm	0.0650	65	20	500	-0.025	1000	2.50	350
1.70mm	0.0669	65	20	500	-0.026	1000	2.50	350
#51	0.0670	65	20	500	-0.026	1000	2.50	350
1.75mm	0.0689	65	20	500	-0.026	1000	2.50	350
#50	0.0700	62	19	500	-0.026	1000	2.50	350
1.80mm	0.0709	62	19	500	-0.027	800	2.50	350
1.85mm	0.0728	62	19	500	-0.027	800	2.50	362
#49	0.0730	62	19	500	-0.027	800	2.50	363
1.90mm	0.0748	59	18	500	-0.027	800	2.50	352
#48	0.0760	59	18	500	-0.028	800	2.50	358
1.95mm	0.0768	59	18	500	-0.028	800	2.50	362
5/64	0.0781	59	18	500	-0.028	800	2.50	368
#47	0.0785	59	18	500	-0.028	800	2.50	370
2.00mm	0.0787	59	18	500	-0.028	800	2.50	371
2.05mm	0.0807	59	18	500	-0.029	800	2.50	380
#46	0.0810	59	18	500	-0.029	800	2.50	382
#45	0.0820	59	18	500	-0.029	800	2.50	386
2.10mm	0.0827	59	18	500	-0.029	800	2.50	390
2.15mm	0.0846	59	18	500	-0.030	800	2.50	398
#44	0.0860	59	18	500	-0.030	800	2.50	405
2.20mm	0.0866	59	18	500	-0.030	800	2.50	408
2.25mm	0.0886	59	18	500	-0.031	800	2.50	417
#43	0.0890	59	18	500	-0.031	800	2.50	419
2.30mm	0.0906	59	18	500	-0.031	800	2.50	427
2.35mm	0.0925	59	18	500	-0.032	800	2.50	436
#42	0.0935	59	18	500	-0.032	800	2.50	440
3/32	0.0938	59	18	500	-0.032	800	2.50	442
2.40mm	0.0945	59	18	500	-0.032	800	2.50	445
#41	0.0960	59	18	500	-0.032	800	2.50	452
2.45mm	0.0965	59	18	500	-0.033	800	2.50	455
#40	0.0980	59	18	500	-0.033	800	2.50	462
2.50mm	0.0984	59	18	500	-0.033	800	2.50	463
#39	0.0995	59	18	500	-0.033	800	2.50	469
2.55mm	0.1004	59	18	500	-0.033	800	2.50	473
#38	0.1015	59	18	500	-0.034	800	2.50	478
2.60mm	0.1024	59	18	500	-0.034	800	2.50	482
#37	0.1040	59	18	500	-0.034	800	2.50	490
2.65mm	0.1043	59	18	500	-0.034	800	2.50	491
2.70mm	0.1063	59	18	500	-0.035	800	2.50	501
#36	0.1065	59	18	500	-0.035	800	2.50	502
2.75mm	0.1083	59	18	500	-0.035	800	2.50	510
7/64	0.1094	59	18	500	-0.036	800	2.50	515
#35	0.1100	59	18	500	-0.036	800	2.50	518
2.80mm	0.1102	59	18	500	-0.036	800	2.50	519
#34	0.1110	59	18	500	-0.036	800	2.50	523
2.85mm	0.1122	59	18	500	-0.036	800	2.50	528
#33	0.1130	59	18	500	-0.036	800	2.50	532
2.90mm	0.1142	59	18	500	-0.037	800	2.50	538
#32	0.1160	59	18	500	-0.037	800	2.50	546
2.95mm	0.1161	59	18	500	-0.037	800	2.50	547
3.00mm	0.1181	59	18	500	-0.038	800	2.50	556
#31	0.1200	59	18	500	-0.038	800	2.50	565
3.05mm	0.1201	59	18	500	-0.038	800	2.50	566
3.10mm	0.1220	59	18	500	-0.038	800	2.50	575
3.15mm	0.1240	59	18	500	-0.039	800	2.50	584
1/8	0.1250	59	18	500	-0.039	800	2.50	589

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3.20mm	0.1260	50	18	500	-0.018	600	2.78	593
3.25mm	0.1280	50	18	500	-0.018	600	2.78	603
#30	0.1285	50	18	500	-0.019	600	2.78	605
3.30mm	0.1299	50	18	500	-0.019	600	2.78	612
3.35mm	0.1319	50	18	500	-0.019	600	2.78	621
3.40mm	0.1339	50	18	500	-0.019	600	2.78	631
3.45mm	0.1358	50	18	500	-0.019	600	2.78	640
#29	0.1360	50	18	500	-0.019	600	2.78	641
3.50mm	0.1378	50	18	500	-0.019	600	2.78	649
3.55mm	0.1398	50	18	500	-0.019	600	2.78	658
#28	0.1405	50	18	500	-0.019	600	2.78	662
9/64	0.1406	50	18	500	-0.019	600	2.78	662
3.60mm	0.1417	50	18	500	-0.019	600	2.78	667
3.65mm	0.1437	50	18	500	-0.020	600	2.78	677
#27	0.1440	50	18	500	-0.020	600	2.78	678
3.70mm	0.1457	50	18	500	-0.020	600	2.78	686
#26	0.1470	50	18	500	-0.020	600	2.78	692
3.75mm	0.1476	50	18	500	-0.020	600	2.78	695
#25	0.1495	50	18	500	-0.020	600	2.78	704
3.80mm	0.1496	50	18	500	-0.020	600	2.78	705
3.85mm	0.1516	50	18	500	-0.020	600	2.78	714
#24	0.1520	50	18	500	-0.020	400	2.78	716
3.90mm	0.1535	50	18	500	-0.020	400	2.78	723
#23	0.1540	50	18	500	-0.020	400	2.78	725
3.95	0.1555	50	18	500	-0.020	400	2.78	732
5/32	0.1562	50	18	500	-0.020	400	2.78	736
#22	0.1570	50	18	500	-0.020	400	2.78	739
4.00mm	0.1575	50	18	500	-0.020	400	2.78	742
#21	0.1590	40	18	500	-0.021	400	2.22	749
4.05mm	0.1594	40	18	500	-0.021	400	2.22	751
#20	0.1610	40	18	500	-0.021	400	2.22	758
4.10mm	0.1614	40	18	500	-0.021	400	2.22	760
4.15mm	0.1634	40	18	500	-0.021	400	2.22	770
4.20mm	0.1654	40	18	500	-0.021	400	2.22	779
#19	0.1660	40	18	500	-0.021	400	2.22	782
4.25mm	0.1673	40	18	500	-0.021	400	2.22	788
4.30mm	0.1693	40	18	500	-0.021	400	2.22	797
#18	0.1695	40	18	500	-0.021	400	2.22	798
4.35mm	0.1713	40	18	500	-0.021	400	2.22	807
11/64	0.1719	40	18	500	-0.021	400	2.22	810
#17	0.1730	40	18	500	-0.021	300	2.22	815
4.40mm	0.1732	40	18	500	-0.021	300	2.22	816
4.45mm	0.1752	40	18	500	-0.022	300	2.22	825
#16	0.1770	40	18	500	-0.022	300	2.22	834
4.50mm	0.1772	40	18	500	-0.022	300	2.22	835
4.55mm	0.1792	40	18	500	-0.022	300	2.22	844
#15	0.1800	36	18	500	-0.022	300	2.00	848
4.60mm	0.1811	36	18	500	-0.022	300	2.00	853
#14	0.1820	36	18	500	-0.022	300	2.00	857
4.65mm	0.1831	36	18	500	-0.022	300	2.00	862
#13	0.1850	36	18	500	-0.022	300	2.00	871
4.70mm	0.1850	36	18	500	-0.022	300	2.00	871
4.75mm	0.1870	36	18	500	-0.022	300	2.00	881
3/16	0.1875	36	18	500	-0.022	300	2.00	883
4.80mm	0.1890	36	18	500	-0.023	300	2.00	890
#12	0.1890	36	18	500	-0.023	300	2.00	890
4.85mm	0.1909	36	18	500	-0.023	300	2.00	899
#11	0.1910	36	18	500	-0.023	300	2.00	900
4.90mm	0.1929	36	18	500	-0.023	300	2.00	909
#10	0.1935	36	18	500	-0.023	300	2.00	911
4.95mm	0.1949	36	18	500	-0.023	300	2.00	918
#9	0.1960	36	18	500	-0.023	200	2.00	923
5.00mm	0.1968	36	18	500	-0.023	200	2.00	927
5.05mm	0.1988	36	18	500	-0.023	200	2.00	936
#8	0.1990	36	18	500	-0.023	200	2.00	937
5.10mm	0.2008	34	18	500	-0.023	200	1.89	946
#7	0.2010	34	18	500	-0.023	200	1.89	947
5.15mm	0.2028	34	18	500	-0.023	200	1.89	955
13/64	0.2031	34	18	500	-0.023	200	1.89	957
#6	0.2040	34	18	500	-0.024	200	1.89	961
5.20mm	0.2047	34	18	500	-0.024	200	1.89	964
#5	0.2055	34	18	500	-0.024	200	1.89	968

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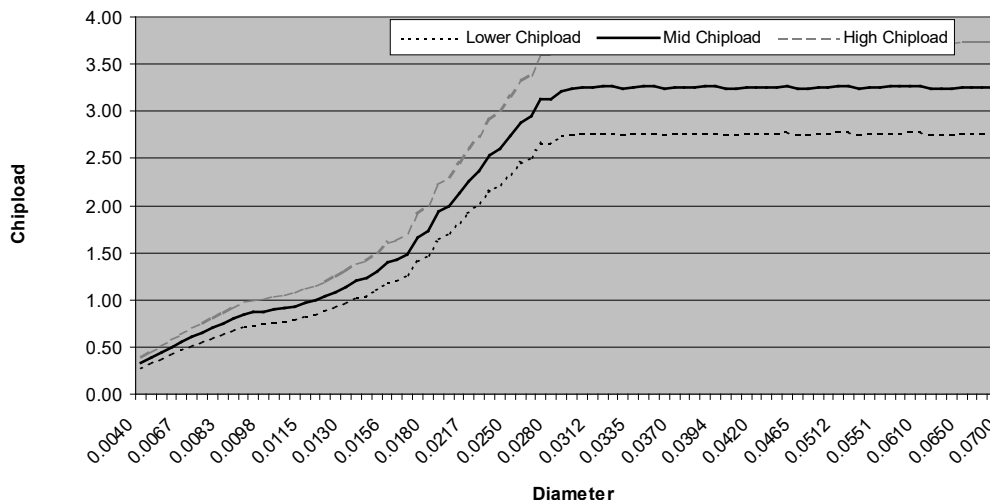
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5.25mm	0.2067	34	18	500	-0.024	200	1.89	974
5.30mm	0.2087	34	18	500	-0.024	200	1.89	983
#4	0.2090	34	18	500	-0.024	200	1.89	984
5.35mm	0.2106	34	18	500	-0.024	200	1.89	992
5.40mm	0.2126	34	18	500	-0.024	200	1.89	1001
#3	0.2130	34	18	500	-0.024	200	1.89	1003
5.45mm	0.2146	34	18	500	-0.024	200	1.89	1011
5.50mm	0.2165	34	18	500	-0.024	200	1.89	1020
5.55mm	0.2185	34	18	500	-0.024	200	1.89	1029
7/32	0.2188	34	18	500	-0.024	200	1.89	1031
5.60mm	0.2205	32	18	500	-0.025	200	1.78	1039
#2	0.2210	32	18	500	-0.025	200	1.78	1041
5.65mm	0.2224	32	18	500	-0.025	200	1.78	1048
5.70mm	0.2244	32	18	500	-0.025	200	1.78	1057
5.75mm	0.2264	32	18	500	-0.025	200	1.78	1066
#1	0.2280	32	18	500	-0.025	200	1.78	1074
5.80mm	0.2283	32	18	500	-0.025	200	1.78	1075
5.85mm	0.2302	32	18	500	-0.025	200	1.78	1084
5.90mm	0.2323	32	18	500	-0.025	200	1.78	1094
A	0.2340	32	18	500	-0.025	200	1.78	1102
5.95mm	0.2343	32	18	500	-0.026	200	1.78	1104
15/64	0.2344	32	18	500	-0.026	200	1.78	1104
6.00mm	0.2362	30	18	500	-0.026	200	1.67	1113
B	0.2380	30	18	500	-0.026	200	1.67	1121
6.05mm	0.2382	30	18	500	-0.026	200	1.67	1122
6.10mm	0.2402	30	18	500	-0.026	200	1.67	1131
C	0.2420	30	18	500	-0.026	200	1.67	1140
6.15mm	0.2421	30	18	500	-0.026	200	1.67	1140
6.20mm	0.2441	30	18	500	-0.026	200	1.67	1150
D	0.2460	30	18	500	-0.026	200	1.67	1159
6.25mm	0.2461	30	18	500	-0.026	200	1.67	1159
6.30mm	0.2480	30	18	500	-0.026	200	1.67	1168
6.35mm	0.2500	30	18	500	-0.027	200	1.67	1178
6.40mm	0.2520	30	18	500	-0.027	200	1.67	1187
6.50mm	0.2559	30	18	500	-0.027	200	1.67	1205
F	0.2570	30	18	500	-0.027	200	1.67	1210
6.60mm	0.2598	30	18	500	-0.027	200	1.67	1224

In some cases, there may be an opportunity to increase the chipload based on the application's robustness. Variables such as machine technology and condition, stack support materials, and Kyocera design selection may allow the increased throughput with higher chiploads. Multiply the recommended chipload by 1.15 to reach the higher chipload.

If the application is not as robust due to heavy glass, high copper content, tight annular ring requirements, or similar, multiply the recommended chipload by 0.85.

Chiploads for RO4350® / Thermoset



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