

Parameter recommendation for drilling of laminates with ceramic fillers and $T_g \geq 200^\circ\text{C}$ RO4xxx, Arlon 25x, Isola IS620

GCT drill type: 1638 / 1640 / 1835 / 1534
Cutting speed: $v = 120 \text{ m/min}$

Spindle speed	200.000 rpm max.							
	D1	f	n	F	R	f	n	F
\emptyset	f = chip load		n = spindle speed		F = infeed		R = retract	
[mm]	[$\mu\text{m}/1$]	[rpm]	[m/min]	[m/min]	[$\mu\text{m}/1$]	[rpm]	[m/min]	[m/min]
0.30	10	125	1.3	6.0				
0.35	15	109	1.6	7.0				
0.40	18	96	1.7	8.0				
0.45	20	85	1.7	9.0				
0.50	22	76	1.7	10.0				
0.55	25	69	1.7	12.0				
0.60	28	64	1.8	15.0				
0.65	31	59	1.8	15.0				
0.70	34	54	1.8	15.0				
0.75	37	51	1.9	15.0				
0.80	40	48	1.9	15.0				
0.85	43	45	1.9	15.0				
0.90	46	42	1.9	15.0				
0.95	49	40	1.9	15.0				
1.00	51	38	1.9	15.0				
1.05	53	36	1.9	15.0				
1.10	56	34	1.9	15.0				
1.15	56	33	1.9	15.0				
1.20	56	32	1.8	15.0				
1.25	56	31	1.7	15.0				
1.30	56	29	1.6	15.0				
1.35	56	28	1.6	15.0				
1.40	56	27	1.5	15.0				
1.45 - 1.60	56	25	1.4	15.0				
1.65 - 1.80	56	23	1.3	15.0				
1.85 - 2.00	56	20	1.1	15.0				
2.05 - 2.30	50	20	1.0	15				
2.35 - 2.60	50	20	1.0	15				
2.65 - 2.90	50	20	1.0	15				
2.95 - 3.15	50	20	1.0	15				
3.175 - 3.95	35	20	0.7	10				
4.00 - 4.95	30	20	0.6	10				
5.00 - 5.95	25	20	0.5	10				
6.00 - 6.40	20	20	0.4	10				

General recommendations:

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- ⇒ Use an entry material (e.g. aluminium approx. 0.20 mm thick).
- ⇒ Melamine coated back-up material is preferred.
- ⇒ For drill- $\emptyset > 4.50 \text{ mm}$ pre-drilling is recommended with approx. 15% of the final diameter.
- ⇒ Max pressure at pressure foot.