Recommended Machining Conditions for SCD-SXC30 Solid Carbide Drills

ISO	Material		Condition	Tensile Strength [N/mm²]	Hardness HB	Material No.	Cutting Speed V_c (m/min)	Cutting Diameter Feed (mm/rev) 3.0-5.0	5.0-8.0	8.0-10.0
P	Non-alloy steel and cast steel, free cutting steel	<0.25% C	Annealed	420	125	1	65-75	0.08-0.16	0.12-0.2	0.16-0.24
		≥0.25% C	Annealed	650	190	2				
		<0.55% C	Quenched and tempered	850	250	3				
		≥0.55% C	Annealed	750	220	4				
			Quenched and tempered	1000	300	5				
	Low alloy steel and cast steel (less than 5% of alloying elements)		Annealed	600	200	6				
			Quenched and tempered	930	275	7				
				1000	300	8				
				1200	350	9				
	High alloyed steel, cast steel, and tool steel		Annealed	680	200	10	60-70			
			Quenched and tempered	1100	325	11				
	Stainless steel and cast steel		Ferritic/martensitic	680	200	12	45-55	0.06-0.12	0.08-0.16	0.1-0.18
			Martensitic	820	240	13				
M	Stainless steel and cast steel		Austenitic, duplex	600	180	14	35-45	0.06-0.12	0.08-0.16	0.1-0.18
K	Grey cast iron (GG)		Ferritic / pearlitic		180	15	75-85	0.14-0.22	0.18-0.30	0.22-0.40
			Pearlitic / martensitic		260	16				
	Cast iron nodular (GGG)		Ferritic		160	17				
			Pearlitic		250	18				
	Malleable cast iron		Ferritic		130	19				
			Pearlitic		230	20				
S	High temperature alloys	Fe based	Annealed		200	31	35-50	0.06-0.12	0.08-0.16	0.1-0.18
			Hardened		280	32				
		Ni or Co based	Annealed		250	33	30-45	0.06-0.12	0.08-0.16	0.1-0.18
			Hardened		350	34				
			Cast		320	35				
	Titanium alloys		Pure	400	190	36	35-50	0.06-0.12	0.08-0.16	0.1-0.18
			Alpha+beta alloys, hardened	1050	310	37				