ISO	Material		Condition	Tensile Strength [N/mm²]	Hardness HB	Material Group No.	V m/min	Feed vs. Flat-Drill Diameter DC=8.0-9.9	DC=10.0-12.9	DC=13.0-15.9	DC=16.0-17.9	DC=18.0-25.4
								frev mm/rev				
P	Non-alloy steel and cast steel, free cutting steel	< 0.25 %C	Annealed	420	125	1	80-110-140	0.08 0.10 0.12	0.10 0.12 0.14	0.12 0.15 0.18	0.14 0.17 0.20	0.18 0.21 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	80-105-130					
	Low alloy and cast steel (less than 5% of alloying elements)		Annealed	600	200	6						
			Quenched and tempered	930	275	7	60-80-100	0.06 0.08 0.10	0.06 0.08 0.10	0.08 0.10 0.12	0.10 0.12 0.14	0.12 0.14 0.16
				1000	300	8						
				1200	350	9						
	High alloyed steel, cast steel and tool steel		Annealed	680	200	10						
			Quenched and tempered	1100	325	11						
	Stainless steel and cast steel		Ferritic/martensitic	680	200	12	60-80-100	0.01 0.02 0.03	0.02 0.03 0.04	0.03 0.04 0.05	0.04 0.05 0.06	0.06 0.07 0.08
			Martensitic	820	240	13						
M	Stainless steel and cast steel		Austenitic, duplex	600	180	14	60-80-100	0.01 0.02 0.03	0.02 0.03 0.04	0.03 0.04 0.05	0.04 0.05 0.06	0.06 0.07 0.08
K	Gray cast iron (GG)		Ferritic / pearlitic		180	17	80-120-160	0.08 0.10 0.12	0.10 0.12 0.14	0.14 0.16 0.18	0.16 0.18 0.20	0.18 0.20 0.22
			Pearlitic / martensitic		260	18						
	Nodular cast iron (GGG)		Ferritic		160	15						
			Pearlitic		250	16						
	Malleable cast iron		Ferritic		130	19						
			Pearlitic		230	20						

■ recommended cutting data