

Material Group	SAPPHIRE CUTTING TOOLS Group	Material Example	Hardness	D.O.C		Feed		Vc		Advised D.O.C [mm]	Advised Feed [mm/t]	Advised Vc [m/min]	
				min[mm]	max[mm]	min[mm/t]	max [mm/t]	min [m/min]	max [m/min]				
Steel	Non Alloyed	C35, Ck45, 1020, 1045, 1060, 28Mn6	125 HB	0.5	18	0.16	0.27	190	330	4	0.19	250	
			190 HB	0.5	18	0.16	0.27	190	300	4	0.19	220	
			250 HB	0.5	18	0.16	0.27	190	250	4	0.19	200	
	Low Alloyed	2	42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	230 HB	0.5	18	0.14	0.21	150	210	4	0.17	180
				280 HB	0.5	18	0.14	0.19	130	190	4	0.15	150
				180 HB	0.5	18	0.14	0.21	150	240	4	0.17	200
				350 HB	0.5	18	0.14	0.19	130	170	4	0.15	140
	High Alloyed	3	X40CrMoV5, H13, M42, D3, S6-5-2, 12Ni19	220 HB	0.5	12.9	0.11	0.19	90	150	3	0.15	130
				280 HB	0.5	12.9	0.11	0.19	90	130	3	0.15	120
				320 HB	0.5	12.9	0.11	0.15	60	110	3	0.13	100
				350 HB	0.5	12.9	0.11	0.15	60	90	3	0.13	80
	Cast Iron	Grey	GG20, GG40, EN-GJL-250, N030B	150 HB	0.5	18	0.16	0.27	150	240	4	0.19	200
200 HB				0.5	18	0.16	0.27	150	220	4	0.19	180	
250 HB				0.5	18	0.16	0.27	150	190	4	0.19	160	
Malleable & Nodular		8	GGG40, GGG70, 50005	150 HB	0.5	18	0.14	0.24	100	200	4	0.17	180
				200 HB	0.5	18	0.14	0.24	100	180	4	0.17	150
				250 HB	0.5	18	0.14	0.24	100	150	4	0.17	130
Hardened Materials	Steel Chilled Cast Iron White Cast Iron	11	G- X300CrMo15	55 HRc	0.5	3.9	0.09	0.12	30	60	1	0.1	40
			Ni-Hard 2	400 HB	0.5	5.1	0.09	0.15	40	80	1.5	0.12	50
			X100CrMo13, 440C, G- X260NiCr42	45 HRc	0.5	6.4	0.09	0.15	40	80	2	0.12	60
				50 HRc	0.5	4.5	0.09	0.14	40	70	1.5	0.11	55
				55 HRc	0.5	3.9	0.09	0.12	40	60	1	0.1	50