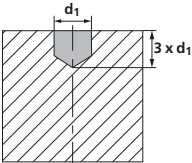


Steel - 3 x d - coated / uncoated

RECOMMENDATION FOR USE
● Excellent | ● Good | ○ Acceptable | ☒ Not recommended

P	N	S ₃
M	S ₁	H ₁
K	S ₂	H ₂

DRILLING WITH EXTERNAL COOLING | CUTTING DATA OVERVIEW



Materials group	Material	Mat. no.	DIN	AISI/ASTM/UNS	v _c		f [mm/rev]									
					[m/min]		Ød ₁									
					Ød1 ≤ 0.4	Ød1 > 0.4	0.1 mm	0.2 mm	0.3 mm	0.4 mm 1/64"	0.6 mm	0.8 mm 1/32"	1.0 mm – 1.2 mm	1.5 mm – 2.0 mm 1/16"		
							f	f	f	f	f	f	f	f	f	
P	Unalloyed carbon steel Rm < 800 N/mm²	1.0301	C10	AISI 1010	5 – 40	40 – 60		0.002	0.005	0.010	0.015	0.030	0.040	0.060	0.080	
		1.0401	C15	AISI 1015												
		1.1191	C45E/CK45	AISI 1045												
		1.0044	S275JR	AISI 1020												
		1.0715	11SMn30	AISI 1215												
	Low alloyed steel Rm > 900 N/mm²	1.5752	15NiCr13	ASTM 3415 / AISI 3310	5 – 25	25 – 50		0.002	0.003 – 0.005	0.008 – 0.010	0.012 – 0.015	0.020 – 0.025	0.035	0.050	0.070	
		1.7131	16MnCr5	AISI 5115												
		1.3505	100Cr6	AISI 52100												
		1.7225	42CrMo4	AISI 4140												
		1.2842	90MnCrV8	AISI O2												
	High alloyed tool steel Rm < 1200 N/mm²	1.2379	X153CrMoV12	AISI D2	5 – 20	20 – 35		0.0005	0.004	0.008	0.010	0.015	0.025	0.040	0.060	
		1.2436	X210CrW12	AISI D4/D6												
		1.3343	HS6-5-2C	AISI M2 / UNS T11302												
1.3355		HS18-0-1	AISI T1 / UNS T12001													
M	Stainless steel ferritic	1.4016	X6Cr17	AISI 430 / UNS S43000												
		1.4105	X6CrMoS17	AISI 430F												
	Stainless steel martensitic	1.4034	X46Cr13	AISI 420C												
		1.4112	X90CrMoV18	AISI 440B												
	Stainless steel martensitic – PH	1.4542	X5CrNiCuNb 16-4	AISI 630 / ASTM 17-4 PH												
		1.4545	X5CrNiCuNb 15-5	ASTM 15-5 PH												
	Stainless steel austenitic	1.4301	X5CrNi 18-10	AISI 304												
		1.4435	X2CrNiMo 18-14-3	AISI 316L												
		1.4441	X2CrNiMo 18-15-3	AISI 316LM												
		1.4539	X1NiCrMoCu 25-20-5	AISI 904L												
K	Cast iron	0.6020	GG20	ASTM 30	5 – 40	50 – 100		0.002	0.005	0.010	0.015	0.020	0.035	0.050	0.070	
		0.6030	GG30	ASTM 40B												
		0.7040	GGG40	ASTM 60-40-18												
		0.7060	GGG60	ASTM 80-60-03												
N	Aluminium alloy wrought	3.2315	AlMgSi1	ASTM 6351	5 – 40	60 – 120		0.003	0.015	0.040	0.050	0.080	0.100	0.120	0.150	
		3.4365	AlZnMgCu1.5	ASTM 7075												
	Aluminium alloy cast	3.2163	GD-AlSi9Cu3	ASTM A380	5 – 40	50 – 80		0.003	0.015	0.040	0.050	0.080	0.100	0.120	0.150	
		3.2381	GD-AlSi10Mg	UNS A03590												
	Copper	2.0040	Cu-OF / CW008A	UNS C10100				Recommended: CrazyDrill Flexpilot Titanium								
		2.0065	Cu-ETP / CW004A	UNS C11000												
	Brass lead free	2.0321	CuZn37 CW508L	UNS C27400												
		2.0360	CuZn40 CW509L	UNS C28000												
	Brass, Bronze Rm < 400 N/mm²	2.0401	CuZn39Pb3 / CW614N	UNS C38500	5 – 40	60 – 100		0.004	0.010	0.030	0.040	0.060	0.080	0.100	0.120	
		2.1020	CuSn6	UNS C51900												
Bronze Rm < 600 N/mm²	2.0966	CuAl10Ni5Fe4	UNS C63000	5 – 20	20 – 40	0.002		0.004	0.006	0.010	0.015	0.025	0.040	0.060		
	2.0960	CuAl9Mn2	UNS C63200													
S ₁	Super alloys	2.4856		Inconel 625												
		2.4668		Inconel 718												
		2.4617	NiMo28	Hastelloy B-2												
		2.4665	NiCr22Fe18Mo	Hastelloy X												
S ₂	Titanium pure	3.7035	Gr.2	ASTM B348 / F67				Recommended: CrazyDrill Flexpilot Titanium								
		3.7065	Gr.4	ASTM B348 / F68												
	Titanium alloys	3.7165	TiAl6V4	ASTM B348 / F136				Recommended: CrazyDrill Flexpilot Titanium								
9.9367	TiAl6Nb7	ASTM F1295														
S ₃	CrCo alloys	2.4964	CoCr20W15Ni	Haynes 25												
			CrCoMo28	ASTM F1537												
H ₁ H ₂	Hardened steel < 55 HRC	1.2510	100MnCrMoW4	AISI O1												
	Hardened steel ≥ 55 HRC	1.2379	X153CrMoV12	AISI D2												