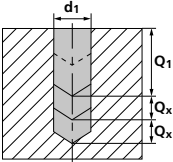


Titanium - 30 x d

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



					v _c		Q ₁		Q _s		f [mm/rev]						
Materials group	Material	Mat. no.	DIN	AISI/ASTM/UNS	[m/min]				0.1 mm	0.2 mm	0.3 mm	Ød1					
					Ød1 ≤ 0.4		Ød1 > 0.4					0.4 mm	0.6 mm	0.8 mm	1.0 mm – 1.2 mm		
					Mid	High	Mid	High			f	f	f	f	f	f	f
P	Unalloyed carbon steel Rm < 800 N/mm²	1.0301	C10	AISI 1010													
		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													
		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													
		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													
		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													
		3.4365	AlZnMgCu1.5	ASTM 7075													
	Aluminium alloy cast	3.2163	GD-AlSi9Cu3	ASTM A380													
		3.2381	GD-AlSi10Mg	UNS A03590													
	Copper	2.0040	Cu-OF / CW008A	UNS C10100	5	40	20	40	2xd1	0.5xd1	0.005	0.010	0.015	0.020	0.030	0.040	0.060
		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													
		2.1020	CuSn6	UNS C51900													
Bronze Rm < 600 N/mm²	2.0966	CuAl10Ni5Fe4	UNS C63000														
	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	5	20	20	30	2xd1	0.25xd1	0.001	0.002	0.003	0.004	0.006	0.008	0.012
		3.7065	Gr.4	ASTM B348 / F68													
S ₃	Titanium alloys	3.7165	TiAl6V4	ASTM B348 / F136													
		9.9367	TiAl6Nb7	ASTM F1295													
	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													