



Tool material

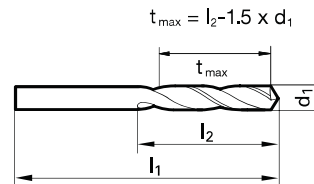
HSCo

Surface



P Steel	•	web thinning $\geq \varnothing 1.000$ • facet split point • Co-alloyed high speed steel • low feed force required • low torque required • for universal application
M Stainless steel	•	
K Cast iron	•	alloyed/unalloyed steels up to 800 N/mm ² • cold/hot work steels • antifriction bearing steels • non-ferrous metals • cast materials • stainless steels • plastics
N Aluminum	•	
S Titanium alloys	•	
H Hardened steel	•	

•=Optimal
○=Limited



Speeds and feeds information on pg. 556

Shank diameter = cut diameter

Diameter (d ₁)			l ₁ mm	t _{max} mm	l ₂ mm	EDP #
inch	wire/ltr	mm				
0.0394		1.00	26.00	4.50	6.00	9055240010000
0.0402		1.02	26.00	4.47	6.00	9055240010200
0.0409		1.04	26.00	4.44	6.00	9055240010400
0.0421		1.07	28.00	5.40	7.00	9055240010700
0.0429		1.09	28.00	5.37	7.00	9055240010900
0.0433		1.10	28.00	5.35	7.00	9055240011000
0.0465		1.18	28.00	5.23	7.00	9055240011800
0.0469	3/64	1.19	30.00	6.22	8.00	9055240011900
0.0472		1.20	30.00	6.20	8.00	9055240012000
0.0512		1.30	30.00	6.05	8.00	9055240013000
0.0520		1.32	30.00	6.02	8.00	9055240013200
0.0551		1.40	32.00	6.90	9.00	9055240014000
0.0591		1.50	32.00	6.75	9.00	9055240015000
0.0594		1.51	34.00	7.74	10.00	9055240015100
0.0626	1/16	1.59	34.00	7.62	10.00	9055240015900
0.0630		1.60	34.00	7.60	10.00	9055240016000
0.0634		1.61	34.00	7.59	10.00	9055240016100
0.0669		1.70	34.00	7.45	10.00	9055240017000
0.0701		1.78	36.00	8.33	11.00	9055240017800
0.0709		1.80	36.00	8.30	11.00	9055240018000
0.0728		1.85	36.00	8.23	11.00	9055240018500
0.0748		1.90	36.00	8.15	11.00	9055240019000
0.0760		1.93	38.00	9.11	12.00	9055240019300
0.0780	5/64	1.98	38.00	9.03	12.00	9055240019800
0.0783		1.99	38.00	9.02	12.00	9055240019900
0.0787		2.00	38.00	9.00	12.00	9055240020000
0.0811		2.06	38.00	8.91	12.00	9055240020600
0.0819		2.08	38.00	8.88	12.00	9055240020800
0.0827		2.10	38.00	8.85	12.00	9055240021000
0.0858		2.18	40.00	9.73	13.00	9055240021800
0.0866		2.20	40.00	9.70	13.00	9055240022000
0.0890		2.26	40.00	9.61	13.00	9055240022600
0.0906		2.30	40.00	9.55	13.00	9055240023000
0.0933		2.37	43.00	10.45	14.00	9055240023700
0.0937	3/32	2.38	43.00	10.43	14.00	9055240023800
0.0945		2.40	43.00	10.40	14.00	9055240024000
0.0961		2.44	43.00	10.34	14.00	9055240024400
0.0980		2.49	43.00	10.27	14.00	9055240024900
0.0984		2.50	43.00	10.25	14.00	9055240025000
0.0996		2.53	43.00	10.21	14.00	9055240025300
0.1016		2.58	43.00	10.13	14.00	9055240025800

Diameter (d ₁)			l ₁ mm	t _{max} mm	l ₂ mm	EDP #
inch	wire/ltr	mm				
0.1024		2.60	43.00	10.10	14.00	9055240026000
0.1039		2.64	43.00	10.04	14.00	9055240026400
0.1063		2.70	46.00	11.95	16.00	9055240027000
0.1067		2.71	46.00	11.94	16.00	9055240027100
0.1094	7/64	2.78	46.00	11.83	16.00	9055240027800
0.1098		2.79	46.00	11.82	16.00	9055240027900
0.1102		2.80	46.00	11.80	16.00	9055240028000
0.1110		2.82	46.00	11.77	16.00	9055240028200
0.1130		2.87	46.00	11.70	16.00	9055240028700
0.1142		2.90	46.00	11.65	16.00	9055240029000
0.1161		2.95	46.00	11.58	16.00	9055240029500
0.1181		3.00	46.00	11.50	16.00	9055240030000
0.1201		3.05	49.00	13.43	18.00	9055240030500
0.1220		3.10	49.00	13.35	18.00	9055240031000
0.1248	1/8	3.17	49.00	13.25	18.00	9055240031700
0.1260		3.20	49.00	13.20	18.00	9055240032000
0.1283		3.26	49.00	13.11	18.00	9055240032600
0.1299		3.30	49.00	13.05	18.00	9055240033000
0.1339		3.40	52.00	14.90	20.00	9055240034000
0.1358		3.45	52.00	14.83	20.00	9055240034500
0.1378		3.50	52.00	14.75	20.00	9055240035000
0.1406	9/64 #28	3.57	52.00	14.65	20.00	9055240035700
0.1417		3.60	52.00	14.60	20.00	9055240036000
0.1441		3.66	52.00	14.51	20.00	9055240036600
0.1457		3.70	52.00	14.45	20.00	9055240037000
0.1469		3.73	52.00	14.41	20.00	9055240037300
0.1496		3.80	55.00	16.30	22.00	9055240038000
0.1520		3.86	55.00	16.21	22.00	9055240038600
0.1535		3.90	55.00	16.15	22.00	9055240039000
0.1539		3.91	55.00	16.14	22.00	9055240039100
0.1563	5/32	3.97	55.00	16.05	22.00	9055240039700
0.1571		3.99	55.00	16.02	22.00	9055240039900
0.1575		4.00	55.00	16.00	22.00	9055240040000
0.1591		4.04	55.00	15.94	22.00	9055240040400
0.1610		4.09	55.00	15.87	22.00	9055240040900
0.1614		4.10	55.00	15.85	22.00	9055240041000
0.1654		4.20	55.00	15.70	22.00	9055240042000
0.1661		4.22	55.00	15.67	22.00	9055240042200
0.1693		4.30	58.00	17.55	24.00	9055240043000
0.1720	11/64	4.37	58.00	17.45	24.00	9055240043700
0.1728		4.39	58.00	17.42	24.00	9055240043900

Diameter (d ₁)			l ₁ mm	t _{max} mm	l ₂ mm	EDP #
inch	wire/ltr	mm				
0.1732		4.40	58.00	17.40	24.00	9055240044000
0.1772		4.50	58.00	17.25	24.00	9055240045000
0.1799		4.57	58.00	17.15	24.00	9055240045700
0.1811		4.60	58.00	17.10	24.00	9055240046000
0.1819		4.62	58.00	17.07	24.00	9055240046200
0.1850		4.70	58.00	16.95	24.00	9055240047000
0.1874	3/16	4.76	62.00	18.86	26.00	9055240047600
0.1890		4.80	62.00	18.80	26.00	9055240048000
0.1909		4.85	62.00	18.73	26.00	9055240048500
0.1929		4.90	62.00	18.65	26.00	9055240049000
0.1937		4.92	62.00	18.62	26.00	9055240049200
0.1961		4.98	62.00	18.53	26.00	9055240049800
0.1969		5.00	62.00	18.50	26.00	9055240050000
0.1992		5.06	62.00	18.41	26.00	9055240050600
0.2008		5.10	62.00	18.35	26.00	9055240051000
0.2012		5.11	62.00	18.34	26.00	9055240051100
0.2031	13/64	5.16	62.00	18.26	26.00	9055240051600
0.2039		5.18	62.00	18.23	26.00	9055240051800
0.2047		5.20	62.00	18.20	26.00	9055240052000
0.2055		5.22	62.00	18.17	26.00	9055240052200
0.2087		5.30	62.00	18.05	26.00	9055240053000
0.2091		5.31	66.00	20.04	28.00	9055240053100
0.2126		5.40	66.00	19.90	28.00	9055240054000
0.2130		5.41	66.00	19.89	28.00	9055240054100
0.2165		5.50	66.00	19.75	28.00	9055240055000
0.2189	7/32	5.56	66.00	19.66	28.00	9055240055600
0.2205		5.60	66.00	19.60	28.00	9055240056000
0.2209		5.61	66.00	19.59	28.00	9055240056100
0.2244		5.70	66.00	19.45	28.00	9055240057000
0.2280		5.79	66.00	19.32	28.00	9055240057900
0.2283		5.80	66.00	19.30	28.00	9055240058000
0.2323		5.90	66.00	19.15	28.00	9055240059000
0.2339	A	5.94	66.00	19.09	28.00	9055240059400
0.2343	15/64	5.95	66.00	19.08	28.00	9055240059500
0.2362		6.00	66.00	19.00	28.00	9055240060000
0.2378	B	6.04	70.00	21.94	31.00	9055240060400
0.2402		6.10	70.00	21.85	31.00	9055240061000
0.2421	C	6.15	70.00	21.78	31.00	9055240061500
0.2441		6.20	70.00	21.70	31.00	9055240062000
0.2461	D	6.25	70.00	21.63	31.00	9055240062500
0.2480		6.30	70.00	21.55	31.00	9055240063000
0.2500	1/4	6.35	70.00	21.48	31.00	9055240063500
0.2520		6.40	70.00	21.40	31.00	9055240064000
0.2559		6.50	70.00	21.25	31.00	9055240065000
0.2571	F	6.53	70.00	21.21	31.00	9055240065300
0.2598		6.60	70.00	21.10	31.00	9055240066000
0.2610	G	6.63	70.00	21.06	31.00	9055240066300
0.2638		6.70	70.00	20.95	31.00	9055240067000
0.2657	17/64	6.75	74.00	23.88	34.00	9055240067500
0.2677		6.80	74.00	23.80	34.00	9055240068000
0.2717	I	6.90	74.00	23.65	34.00	9055240069000
0.2756		7.00	74.00	23.50	34.00	9055240070000
0.2768	J	7.03	74.00	23.46	34.00	9055240070300
0.2795		7.10	74.00	23.35	34.00	9055240071000
0.2811	9/32	7.14	74.00	23.29	34.00	9055240071400
0.2835		7.20	74.00	23.20	34.00	9055240072000
0.2874		7.30	74.00	23.05	34.00	9055240073000
0.2902	L	7.37	74.00	22.95	34.00	9055240073700
0.2913		7.40	74.00	22.90	34.00	9055240074000
0.2949	M	7.49	74.00	22.77	34.00	9055240074900
0.2953		7.50	74.00	22.75	34.00	9055240075000
0.2969	19/64	7.54	79.00	25.69	37.00	9055240075400
0.2992		7.60	79.00	25.60	37.00	9055240076000

Diameter (d ₁)			l ₁ mm	t _{max} mm	l ₂ mm	EDP #
inch	wire/ltr	mm				
0.3020	N	7.67	79.00	25.50	37.00	9055240076700
0.3031		7.70	79.00	25.45	37.00	9055240077000
0.3071		7.80	79.00	25.30	37.00	9055240078000
0.3110		7.90	79.00	25.15	37.00	9055240079000
0.3126	5/16	7.94	79.00	25.09	37.00	9055240079400
0.3150		8.00	79.00	25.00	37.00	9055240080000
0.3161	O	8.03	79.00	24.96	37.00	9055240080300
0.3189		8.10	79.00	24.85	37.00	9055240081000
0.3228	P	8.20	79.00	24.70	37.00	9055240082000
0.3268		8.30	79.00	24.55	37.00	9055240083000
0.3280	21/64	8.33	79.00	24.51	37.00	9055240083300
0.3307		8.40	79.00	24.40	37.00	9055240084000
0.3319	Q	8.43	79.00	24.36	37.00	9055240084300
0.3346		8.50	79.00	24.25	37.00	9055240085000
0.3386		8.60	84.00	27.10	40.00	9055240086000
0.3390	R	8.61	84.00	27.09	40.00	9055240086100
0.3425		8.70	84.00	26.95	40.00	9055240087000
0.3437	11/32	8.73	84.00	26.91	40.00	9055240087300
0.3465		8.80	84.00	26.80	40.00	9055240088000
0.3480	S	8.84	84.00	26.74	40.00	9055240088400
0.3504		8.90	84.00	26.65	40.00	9055240089000
0.3543		9.00	84.00	26.50	40.00	9055240090000
0.3579	T	9.09	84.00	26.37	40.00	9055240090900
0.3583		9.10	84.00	26.35	40.00	9055240091000
0.3594	23/64	9.13	84.00	26.31	40.00	9055240091300
0.3622		9.20	84.00	26.20	40.00	9055240092000
0.3661		9.30	84.00	26.05	40.00	9055240093000
0.3677	U	9.34	84.00	25.99	40.00	9055240093400
0.3701		9.40	84.00	25.90	40.00	9055240094000
0.3740		9.50	84.00	25.75	40.00	9055240095000
0.3748	3/8	9.52	89.00	28.72	43.00	9055240095200
0.3772	V	9.58	89.00	28.63	43.00	9055240095800
0.3780		9.60	89.00	28.60	43.00	9055240096000
0.3819		9.70	89.00	28.45	43.00	9055240097000
0.3858	W	9.80	89.00	28.30	43.00	9055240098000
0.3898		9.90	89.00	28.15	43.00	9055240099000
0.3906	25/64	9.92	89.00	28.12	43.00	9055240099200
0.3937		10.00	89.00	28.00	43.00	9055240100000
0.3969	X	10.08	89.00	27.88	43.00	9055240100800
0.3976		10.10	89.00	27.85	43.00	9055240101000
0.4016		10.20	89.00	27.70	43.00	9055240102000
0.4039	Y	10.26	89.00	27.61	43.00	9055240102600
0.4055		10.30	89.00	27.55	43.00	9055240103000
0.4063	13/32	10.32	89.00	27.52	43.00	9055240103200
0.4094		10.40	89.00	27.40	43.00	9055240104000
0.4130	Z	10.49	89.00	27.27	43.00	9055240104900
0.4134		10.50	89.00	27.25	43.00	9055240105000
0.4220	27/64	10.72	95.00	30.92	47.00	9055240107200
0.4331		11.00	95.00	30.50	47.00	9055240110000
0.4374	7/16	11.11	95.00	30.34	47.00	9055240111100
0.4528		11.50	95.00	29.75	47.00	9055240115000
0.4531	29/64	11.51	95.00	29.74	47.00	9055240115100
0.4689	15/32	11.91	102.00	33.14	51.00	9055240119100
0.4724		12.00	102.00	33.00	51.00	9055240120000
0.4843	31/64	12.30	102.00	32.55	51.00	9055240123000
0.4921		12.50	102.00	32.25	51.00	9055240125000
0.5000	1/2	12.70	102.00	31.95	51.00	9055240127000
0.5118		13.00	102.00	31.50	51.00	9055240130000
0.5157	33/64	13.10	102.00	31.35	51.00	9055240131000
0.5311	17/32	13.49	107.00	33.77	54.00	9055240134900
0.5315		13.50	107.00	33.75	54.00	9055240135000
0.5512		14.00	107.00	33.00	54.00	9055240140000
0.5626	9/16	14.29	111.00	34.57	56.00	9055240142900

Material group	Hardness		SFM	Feed Rate - IPR									
	HRc	Bhn		1/16 in. 1.590 mm	1/8 in. 3.170 mm	1/4 in. 6.350 mm	3/8 in. 9.520 mm	1/2 in. 12.700 mm	5/8 in. 15.870 mm	3/4 in. 19.050 mm	1 in. 25.400 mm	1 1/4 in. 31.750 mm	1 1/2 in. 38.100 mm
Common structural steels	- ≤ 32	≤ 150 ≤ 301	130 100	0.0017 0.0015	0.0050 0.0040	0.0080 0.0065	0.0100 0.0080	0.0125 0.0100	0.0125 0.0100				
Free-cutting steels	≤ 25 ≤ 32	≤ 255 ≤ 301	155 125	0.0017 0.0017	0.0050 0.0050	0.0080 0.0080	0.0100 0.0100	0.0125 0.0125	0.0125 0.0125				
Unalloyed heat-treatable steels	≤ 20 ≤ 25 ≤ 32	≤ 220 ≤ 255 ≤ 301	130 100 65	0.0017 0.0017 0.0015	0.0050 0.0050 0.0040	0.0080 0.0080 0.0065	0.0100 0.0100 0.0080	0.0125 0.0125 0.0100	0.0125 0.0125 0.0100				
Alloyed heat-treatable steels	≤ 32 ≤ 43	≤ 301 ≤ 402	55 35	0.0012 0.0010	0.0030 0.0025	0.0050 0.0040	0.0065 0.0050	0.0080 0.0065	0.0080 0.0065				
Unalloyed case hardened steels	≤ 25	≤ 255	100	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125				
Alloyed case hardened steels	≤ 32 ≤ 43	≤ 301 ≤ 402	50 35	0.0012 0.0010	0.0030 0.0025	0.0050 0.0040	0.0065 0.0050	0.0080 0.0065	0.0080 0.0065				
Nitriding steels	≤ 32 ≤ 43	≤ 301 ≤ 402	45 35	0.0012 0.0010	0.0030 0.0025	0.0050 0.0040	0.0065 0.0050	0.0080 0.0065	0.0080 0.0065				
Tool steels	≤ 25 ≤ 43	≤ 255 ≤ 402	55 30	0.0012 0.0010	0.0030 0.0025	0.0050 0.0040	0.0065 0.0050	0.0080 0.0065	0.0080 0.0065				
High speed steels	≤ 43	≤ 402	30	0.0010	0.0025	0.0040	0.0050	0.0065	0.0065				
Spring steels	≤ 38	≤ 354											
Hardened steels	≤ 48 ≤ 66	≤ 460 -											
Stainless steels, sulphured austenitic martensitic	≤ 28 ≤ 36 ≤ 46	≤ 273 ≤ 337 ≤ 435	50 35 45	0.0012 0.0012 0.0012	0.0030 0.0030 0.0030	0.0050 0.0050 0.0050	0.0065 0.0065 0.0065	0.0080 0.0080 0.0080	0.0080 0.0080 0.0080				
Cast iron	≤ 23 ≤ 38	≤ 242 ≤ 354	115 90	0.0017 0.0017	0.0050 0.0050	0.0080 0.0080	0.0100 0.0100	0.0125 0.0125	0.0125 0.0125				
Spheroidal graphite iron and malleable cast iron	≤ 23 ≤ 38	≤ 242 ≤ 354	100 80	0.0017 0.0017	0.0050 0.0050	0.0080 0.0080	0.0100 0.0100	0.0125 0.0125	0.0125 0.0125				
Chilled cast iron	≤ 38	≤ 354											
New cast materials GGV	≤ 20 ≤ 32	≤ 220 ≤ 301											
New cast materials ADI	≤ 32 ≤ 43	≤ 301 ≤ 402											
Special alloys	≤ 54	≤ 549											
Ti and Ti-alloys	≤ 25 ≤ 43	≤ 255 ≤ 402											
Aluminium and Al-alloys	-	≤ 120	180	0.0020	0.0065	0.0100	0.0125	0.0160	0.0160				
Al wrought alloys	-	≤ 200	180	0.0020	0.0065	0.0100	0.0125	0.0160	0.0160				
Al cast alloys ≤ 10 % Si ≤ 24 % Si	- -	≤ 180 ≤ 180	230 185	0.0020 0.0017	0.0065 0.0050	0.0100 0.0080	0.0125 0.0100	0.0160 0.0125	0.0160 0.0125				
Magnesium alloys	-	≤ 120	205	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125				
Copper, low-alloyed	-	≤ 150	80	0.0015	0.0040	0.0065	0.0080	0.0100	0.0100				
Brass, short-chipping	-	≤ 180	165	0.0015	0.0040	0.0065	0.0080	0.0100	0.0100				
long-chipping	-	≤ 180	100	0.0015	0.0040	0.0065	0.0080	0.0100	0.0100				
Bronze, short-chipping	-	≤ 180	130	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080				
long-chipping	≤ 25 ≤ 32	≤ 255 ≤ 301	75 75	0.0012 0.0012	0.0030 0.0030	0.0050 0.0050	0.0065 0.0065	0.0080 0.0080	0.0080 0.0080				
Duroplastics			65	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080				
Thermoplastics			65	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080				
Reinforced plastics - Kevlar													
Reinforced plastics - GFK / CFK													

Material group	Hardness		SFM	Feed Rate - IPR									
	HRc	Bhn		1/16 in. 1.590 mm	1/8 in. 3.170 mm	1/4 in. 6.350 mm	3/8 in. 9.520 mm	1/2 in. 12.700 mm	5/8 in. 15.870 mm	3/4 in. 19.050 mm	1 in. 25.400 mm	1 1/4 in. 31.750 mm	1 1/2 in. 38.100 mm
Common structural steels	- ≤ 32	≤ 150 ≤ 301	290 265		0.0050 0.0040	0.0080 0.0065	0.0100 0.0080	0.0125 0.0100	0.0125 0.0100	0.0140 0.0110	0.0160 0.0125		
Free-cutting steels	≤ 25 ≤ 32	≤ 255 ≤ 301	325 300		0.0065 0.0065	0.0100 0.0100	0.0125 0.0125	0.0160 0.0160	0.0160 0.0160	0.0180 0.0180	0.0200 0.0200		
Unalloyed heat-treatable steels	≤ 20 ≤ 25 ≤ 32	≤ 220 ≤ 255 ≤ 301	290 260 265		0.0065 0.0050 0.0050	0.0100 0.0080 0.0080	0.0125 0.0100 0.0100	0.0160 0.0125 0.0125	0.0160 0.0125 0.0125	0.0180 0.0140 0.0140	0.0200 0.0160 0.0160		
Alloyed heat-treatable steels	≤ 32 ≤ 43	≤ 301 ≤ 402	265 195		0.0050 0.0050	0.0080 0.0080	0.0100 0.0100	0.0125 0.0125	0.0125 0.0125	0.0140 0.0140	0.0160 0.0160		
Unalloyed case hardened steels	≤ 25	≤ 255	290		0.0065	0.0100	0.0125	0.0160	0.0160	0.0180	0.0200		
Alloyed case hardened steels	≤ 32 ≤ 43	≤ 301 ≤ 402	265 195		0.0050 0.0030	0.0080 0.0050	0.0100 0.0065	0.0125 0.0080	0.0125 0.0080	0.0140 0.0090	0.0160 0.0100		
Nitriding steels	≤ 32 ≤ 43	≤ 301 ≤ 402	190 155		0.0050 0.0030	0.0080 0.0050	0.0100 0.0065	0.0125 0.0080	0.0125 0.0080	0.0140 0.0090	0.0160 0.0100		
Tool steels	≤ 25 ≤ 43	≤ 255 ≤ 402	145 110		0.0040 0.0030	0.0065 0.0050	0.0080 0.0065	0.0100 0.0080	0.0100 0.0080	0.0110 0.0090	0.0125 0.0100		
High speed steels	≤ 43	≤ 402	115		0.0030	0.0050	0.0065	0.0080	0.0080	0.0090	0.0100		
Spring steels	≤ 38	≤ 354	115		0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050		
Stainless steels, sulphured austenitic martensitic	≤ 28 ≤ 36 ≤ 46	≤ 273 ≤ 337 ≤ 435	130 130 140		0.0030 0.0030 0.0030	0.0050 0.0050 0.0050	0.0065 0.0065 0.0065	0.0080 0.0080 0.0080	0.0080 0.0080 0.0080	0.0090 0.0090 0.0090	0.0100 0.0100 0.0100		
Cast iron	≤ 23 ≤ 38	≤ 242 ≤ 354	370 350		0.0080 0.0080	0.0125 0.0125	0.0160 0.0160	0.0200 0.0200	0.0200 0.0200	0.0220 0.0220	0.0245 0.0245		
Spheroidal graphite iron and malleable cast iron	≤ 23 ≤ 38	≤ 242 ≤ 354	245 260		0.0080 0.0065	0.0125 0.0100	0.0160 0.0125	0.0200 0.0160	0.0200 0.0160	0.0220 0.0180	0.0245 0.0200		
Chilled cast iron	≤ 38	≤ 354											
New cast materials GGV	≤ 20 ≤ 32	≤ 220 ≤ 301											
New cast materials ADI	≤ 32 ≤ 43	≤ 301 ≤ 402											
Aluminium and Al-alloys	-	≤ 120	485		0.0080	0.0125	0.0160	0.0200	0.0200	0.0220	0.0245		
Al wrought alloys	-	≤ 200	485		0.0080	0.0125	0.0160	0.0200	0.0200	0.0220	0.0245		
Al cast alloys ≤ 10 % Si ≤ 24 % Si	- -	≤ 180 ≤ 180	490 390		0.0080 0.0080	0.0125 0.0125	0.0160 0.0160	0.0200 0.0200	0.0200 0.0200	0.0220 0.0220	0.0245 0.0245		
Magnesium alloys	-	≤ 120	485		0.0065	0.0100	0.0125	0.0160	0.0160	0.0180	0.0200		
Copper, low-alloyed	-	≤ 150	260		0.0050	0.0080	0.0100	0.0125	0.0125	0.0140	0.0160		
Brass, short-chipping	-	≤ 180	390		0.0065	0.0100	0.0125	0.0160	0.0160	0.0180	0.0200		
long-chipping	-	≤ 180	390		0.0050	0.0080	0.0100	0.0125	0.0125	0.0140	0.0160		
Bronze, short-chipping	-	≤ 180	135		0.0050	0.0080	0.0100	0.0125	0.0125	0.0140	0.0160		
long-chipping	≤ 25 ≤ 32	≤ 255 ≤ 301	125		0.0040	0.0065	0.0080	0.0100	0.0100	0.0110	0.0125		
Duroplastics													
Thermoplastics													
Reinforced plastics - Kevlar													
Reinforced plastics - GFK / CFK													

Note: Pilot holes (depth >1xD) are recommended when drilling depths greater than 7xD. The pilot hole can be produced with a short, rigid drill. The diameter should be 0.01 - 0.02 mm larger than the diameter of the finish drill. Ratio drills can produce their own pilot hole by reducing speed and feed rates by 30-40%.