Stub length drills

Series no. **5520**

Tool material **HSCO**

Surface **S**

~3xD Cutting depth · DIN 1897 Standard · GU 500 DZ Type · 118° Point angle · h8 Tolerance on Ø · Web Thinning · Cyl Shank form · R Cutting direction · GUHRING

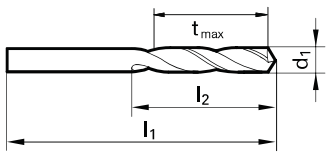
P	Steel	●
M	Stainless steel	●
K	Cast iron	●
N	Aluminum	●
S	Titanium alloys	
H	Hardened steel	

●=Optimal
○=Limited

web thinning ≥ Ø 1.000 • facet split point • Co-alloyed high speed steel • low feed force required • low torque required • for universal application

alloyed/unalloyed steels up to 800 N/mm² • cold/hot work steels • antifriction bearing steels • non-ferrous metals • cast materials • stainless steels • plastics

$t_{max} = l_2\text{-}1.5 \times d_1$



Speeds and feeds information on pg. 554

Shank diameter = cut diameter

Diameter (d_1) inch	wire/ltr	mm	l_1 mm	t_{max} mm	l_2 mm	EDP #
0.0394		1.00	26.00	4.50	6.00	9055200010000
0.0402		1.02	26.00	4.47	6.00	9055200010200
0.0409		1.04	26.00	4.44	6.00	9055200010400
0.0421		1.07	28.00	5.40	7.00	9055200010700
0.0429		1.09	28.00	5.37	7.00	9055200010900
0.0433		1.10	28.00	5.35	7.00	9055200011000
0.0465		1.18	28.00	5.23	7.00	9055200011800
0.0469	3/64	1.19	30.00	6.22	8.00	9055200011900
0.0472		1.20	30.00	6.20	8.00	9055200012000
0.0512		1.30	30.00	6.05	8.00	9055200013000
0.0520		1.32	30.00	6.02	8.00	9055200013200
0.0551		1.40	32.00	6.90	9.00	9055200014000
0.0591		1.50	32.00	6.75	9.00	9055200015000
0.0594		1.51	34.00	7.74	10.00	9055200015100
0.0626	1/16	1.59	34.00	7.62	10.00	9055200015900
0.0630		1.60	34.00	7.60	10.00	9055200016000
0.0634		1.61	34.00	7.59	10.00	9055200016100
0.0669		1.70	34.00	7.45	10.00	9055200017000
0.0701		1.78	36.00	8.33	11.00	9055200017800
0.0709		1.80	36.00	8.30	11.00	9055200018000
0.0728		1.85	36.00	8.23	11.00	9055200018500
0.0748		1.90	36.00	8.15	11.00	9055200019000
0.0760		1.93	38.00	9.11	12.00	9055200019300
0.0780	5/64	1.98	38.00	9.03	12.00	9055200019800
0.0783		1.99	38.00	9.02	12.00	9055200019900
0.0787		2.00	38.00	9.00	12.00	9055200020000
0.0811		2.06	38.00	8.91	12.00	9055200020600
0.0819		2.08	38.00	8.88	12.00	9055200020800
0.0827		2.10	38.00	8.85	12.00	9055200021000
0.0858		2.18	40.00	9.73	13.00	9055200021800
0.0866		2.20	40.00	9.70	13.00	9055200022000
0.0890		2.26	40.00	9.61	13.00	9055200022600
0.0906		2.30	40.00	9.55	13.00	9055200023000
0.0933		2.37	43.00	10.45	14.00	9055200023700
0.0937	3/32	2.38	43.00	10.43	14.00	9055200023800
0.0945		2.40	43.00	10.40	14.00	9055200024000
0.0961		2.44	43.00	10.34	14.00	9055200024400
0.0980		2.49	43.00	10.27	14.00	9055200024900
0.0984		2.50	43.00	10.25	14.00	9055200025000
0.0996		2.53	43.00	10.21	14.00	9055200025300
0.1016		2.58	43.00	10.13	14.00	9055200025800
0.1024		2.60	43.00	10.10	14.00	9055200026000

Diameter (d_1) inch	wire/ltr	mm	l_1 mm	t_{max} mm	l_2 mm	EDP #
0.1039		2.64	43.00	10.04	14.00	9055200026400
0.1063		2.70	46.00	11.95	16.00	9055200027000
0.1067		2.71	46.00	11.94	16.00	9055200027100
0.1094	7/64	2.78	46.00	11.83	16.00	9055200027800
0.1098		2.79	46.00	11.82	16.00	9055200027900
0.1102		2.80	46.00	11.80	16.00	9055200028000
0.1110		2.82	46.00	11.77	16.00	9055200028200
0.1130		2.87	46.00	11.70	16.00	9055200028700
0.1142		2.90	46.00	11.65	16.00	9055200029000
0.1161		2.95	46.00	11.58	16.00	9055200029500
0.1181		3.00	46.00	11.50	16.00	9055200030000
0.1201		3.05	49.00	13.43	18.00	9055200030500
0.1220		3.10	49.00	13.35	18.00	9055200031000
0.1248	1/8	3.17	49.00	13.25	18.00	9055200031700
0.1260		3.20	49.00	13.20	18.00	9055200032000
0.1283		3.26	49.00	13.11	18.00	9055200032600
0.1299		3.30	49.00	13.05	18.00	9055200033000
0.1339		3.40	52.00	14.90	20.00	9055200034000
0.1358		3.45	52.00	14.83	20.00	9055200034500
0.1378		3.50	52.00	14.75	20.00	9055200035000
0.1406	9/64 #28	3.57	52.00	14.65	20.00	9055200035700
0.1417		3.60	52.00	14.60	20.00	9055200036000
0.1441		3.66	52.00	14.51	20.00	9055200036600
0.1457		3.70	52.00	14.45	20.00	9055200037000
0.1469		3.73	52.00	14.41	20.00	9055200037300
0.1496		3.80	55.00	16.30	22.00	9055200038000
0.1520		3.86	55.00	16.21	22.00	9055200038600
0.1535		3.90	55.00	16.15	22.00	9055200039000
0.1539		3.91	55.00	16.14	22.00	9055200039100
0.1563	5/32	3.97	55.00	16.05	22.00	9055200039700
0.1571		3.99	55.00	16.02	22.00	9055200039900
0.1575		4.00	55.00	16.00	22.00	9055200040000
0.1591		4.04	55.00	15.94	22.00	9055200040400
0.1610		4.09	55.00	15.87	22.00	9055200040900
0.1614		4.10	55.00	15.85	22.00	9055200041000
0.1654		4.20	55.00	15.70	22.00	9055200042000
0.1661		4.22	55.00	15.67	22.00	9055200042200
0.1693		4.30	58.00	17.55	24.00	9055200043000
0.1720	11/64	4.37	58.00	17.45	24.00	9055200043700
0.1728		4.39	58.00	17.42	24.00	9055200043900
0.1732		4.40	58.00	17.40	24.00	9055200044000
0.1772		4.50	58.00	17.25	24.00	9055200045000

Stub length drills

Series no. **5520**

Diameter (d_1) inch	wire/ltr	mm	l_1 mm	t_{max} mm	l_2 mm	EDP #
0.1799		4.57	58.00	17.15	24.00	9055200045700
0.1811		4.60	58.00	17.10	24.00	9055200046000
0.1819		4.62	58.00	17.07	24.00	9055200046200
0.1850		4.70	58.00	16.95	24.00	9055200047000
0.1874	3/16	4.76	62.00	18.86	26.00	9055200047600
0.1890		4.80	62.00	18.80	26.00	9055200048000
0.1909		4.85	62.00	18.73	26.00	9055200048500
0.1929		4.90	62.00	18.65	26.00	9055200049000
0.1937		4.92	62.00	18.62	26.00	9055200049200
0.1961		4.98	62.00	18.53	26.00	9055200049800
0.1969		5.00	62.00	18.50	26.00	9055200050000
0.1992		5.06	62.00	18.41	26.00	9055200050600
0.2008		5.10	62.00	18.35	26.00	9055200051000
0.2012		5.11	62.00	18.34	26.00	9055200051100
0.2031	13/64	5.16	62.00	18.26	26.00	9055200051600
0.2039		5.18	62.00	18.23	26.00	9055200051800
0.2047		5.20	62.00	18.20	26.00	9055200052000
0.2055		5.22	62.00	18.17	26.00	9055200052200
0.2087		5.30	62.00	18.05	26.00	9055200053000
0.2091		5.31	66.00	20.04	28.00	9055200053100
0.2126		5.40	66.00	19.90	28.00	9055200054000
0.2130		5.41	66.00	19.89	28.00	9055200054100
0.2165		5.50	66.00	19.75	28.00	9055200055000
0.2189	7/32	5.56	66.00	19.66	28.00	9055200055600
0.2205		5.60	66.00	19.60	28.00	9055200056000
0.2209		5.61	66.00	19.59	28.00	9055200056100
0.2244		5.70	66.00	19.45	28.00	9055200057000
0.2280		5.79	66.00	19.32	28.00	9055200057900
0.2283		5.80	66.00	19.30	28.00	9055200058000
0.2323		5.90	66.00	19.15	28.00	9055200059000
0.2339	A	5.94	66.00	19.09	28.00	9055200059400
0.2343	15/64	5.95	66.00	19.08	28.00	9055200059500
0.2362		6.00	66.00	19.00	28.00	9055200060000
0.2378	B	6.04	70.00	21.94	31.00	9055200060400
0.2402		6.10	70.00	21.85	31.00	9055200061000
0.2421	C	6.15	70.00	21.78	31.00	9055200061500
0.2441		6.20	70.00	21.70	31.00	9055200062000
0.2461	D	6.25	70.00	21.63	31.00	9055200062500
0.2480		6.30	70.00	21.55	31.00	9055200063000
0.2500	1/4 E	6.35	70.00	21.48	31.00	9055200063500
0.2520		6.40	70.00	21.40	31.00	9055200064000
0.2559		6.50	70.00	21.25	31.00	9055200065000
0.2571	F	6.53	70.00	21.21	31.00	9055200065300
0.2598		6.60	70.00	21.10	31.00	9055200066000
0.2610	G	6.63	70.00	21.06	31.00	9055200066300
0.2638		6.70	70.00	20.95	31.00	9055200067000
0.2657	17/64 H	6.75	74.00	23.88	34.00	9055200067500
0.2677		6.80	74.00	23.80	34.00	9055200068000
0.2717	I	6.90	74.00	23.65	34.00	9055200069000
0.2756		7.00	74.00	23.50	34.00	9055200070000
0.2768	J	7.03	74.00	23.46	34.00	9055200070300
0.2795		7.10	74.00	23.35	34.00	9055200071000
0.2811	9/32 K	7.14	74.00	23.29	34.00	9055200071400
0.2835		7.20	74.00	23.20	34.00	9055200072000
0.2874		7.30	74.00	23.05	34.00	9055200073000
0.2902	L	7.37	74.00	22.95	34.00	9055200073700
0.2913		7.40	74.00	22.90	34.00	9055200074000
0.2949	M	7.49	74.00	22.77	34.00	9055200074900
0.2953		7.50	74.00	22.75	34.00	9055200075000
0.2969	19/64	7.54	79.00	25.69	37.00	9055200075400
0.2992		7.60	79.00	25.60	37.00	9055200076000
0.3020	N	7.67	79.00	25.50	37.00	9055200076700

Diameter (d_1) inch	wire/ltr	mm	l_1 mm	t_{max} mm	l_2 mm	EDP #
0.3031		7.70	79.00	25.45	37.00	9055200077000
0.3071		7.80	79.00	25.30	37.00	9055200078000
0.3110		7.90	79.00	25.15	37.00	9055200079000
0.3126	5/16	7.94	79.00	25.09	37.00	9055200079400
0.3150		8.00	79.00	25.00	37.00	9055200080000
0.3161	O	8.03	79.00	24.96	37.00	9055200080300
0.3189		8.10	79.00	24.85	37.00	9055200081000
0.3228	P	8.20	79.00	24.70	37.00	9055200082000
0.3268		8.30	79.00	24.55	37.00	9055200083000
0.3280	21/64	8.33	79.00	24.51	37.00	9055200083300
0.3307		8.40	79.00	24.40	37.00	9055200084000
0.3319	Q	8.43	79.00	24.36	37.00	9055200084300
0.3346		8.50	79.00	24.25	37.00	9055200085000
0.3386		8.60	84.00	27.10	40.00	9055200086000
0.3390	R	8.61	84.00	27.09	40.00	9055200086100
0.3425		8.70	84.00	26.95	40.00	9055200087000
0.3437	11/32	8.73	84.00	26.91	40.00	9055200087300
0.3465		8.80	84.00	26.80	40.00	9055200088000
0.3480	S	8.84	84.00	26.74	40.00	9055200088400
0.3504		8.90	84.00	26.65	40.00	9055200089000
0.3543		9.00	84.00	26.50	40.00	9055200090000
0.3579	T	9.09	84.00	26.37	40.00	9055200090900
0.3583		9.10	84.00	26.35	40.00	9055200091000
0.3594	23/64	9.13	84.00	26.31	40.00	9055200091300
0.3622		9.20	84.00	26.20	40.00	9055200092000
0.3661		9.30	84.00	26.05	40.00	9055200093000
0.3677	U	9.34	84.00	25.99	40.00	9055200093400
0.3701		9.40	84.00	25.90	40.00	9055200094000
0.3740		9.50	84.00	25.75	40.00	9055200095000
0.3748	3/8	9.52	89.00	28.72	43.00	9055200095200
0.3772	V	9.58	89.00	28.63	43.00	9055200095800
0.3780		9.60	89.00	28.60	43.00	9055200096000
0.3819		9.70	89.00	28.45	43.00	9055200097000
0.3858	W	9.80	89.00	28.30	43.00	9055200098000
0.3898		9.90	89.00	28.15	43.00	9055200099000
0.3906	25/64	9.92	89.00	28.12	43.00	9055200099200
0.3937		10.00	89.00	28.00	43.00	9055200100000
0.3969	X	10.08	89.00	27.88	43.00	9055200100800
0.3976		10.10	89.00	27.85	43.00	9055200101000
0.4016		10.20	89.00	27.70	43.00	9055200102000
0.4039	Y	10.26	89.00	27.61	43.00	9055200102600
0.4055		10.30	89.00	27.55	43.00	9055200103000
0.4063	13/32	10.32	89.00	27.52	43.00	9055200103200
0.4094		10.40	89.00	27.40	43.00	9055200104000
0.4130	Z	10.49	89.00	27.27	43.00	9055200104900
0.4134		10.50	89.00	27.25	43.00	9055200105000
0.4220	27/64	10.72	95.00	30.92	47.00	9055200107200
0.4331		11.00	95.00	30.50	47.00	9055200110000
0.4374	7/16	11.11	95.00	30.34	47.00	9055200111100
0.4528		11.50	95.00	29.75	47.00	9055200115000
0.4531	29/64	11.51	95.00	29.74	47.00	9055200115100
0.4689	15/32	11.91	102.00	33.14	51.00	9055200119100
0.4724		12.00	102.00	33.00	51.00	9055200120000
0.4843	31/64	12.30	102.00	32.55	51.00	9055200123000
0.4921		12.50	102.00	32.25	51.00	9055200125000
0.5000	1/2	12.70	102.00	31.95	51.00	9055200127000
0.5118		13.00	102.00	31.50	51.00	9055200130000
0.5157	33/64	13.10	102.00	31.35	51.00	9055200131000
0.5311	17/32	13.49	107.00	33.77	54.00	9055200134900
0.5315		13.50	107.00	33.75	54.00	9055200135000
0.5512		14.00	107.00	33.00	54.00	9055200140000
0.5626	9/16	14.29	111.00	34.57	56.00	9055200142900

Series # 5520

Material group	Hardness HRc	Hardness Bhn	SFM	Feed Rate - IPR 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	-	≤ 150	160	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125				
	≤ 32	≤ 301	130	0.0015	0.0040	0.0065	0.0080	0.0100	0.0100				
Free-cutting steels	≤ 25	≤ 255	195	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125				
	≤ 32	≤ 301	160	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125				
Unalloyed heat-treatable steels	≤ 20	≤ 220	160	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125				
	≤ 25	≤ 255	130	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125				
	≤ 32	≤ 301	80	0.0015	0.0040	0.0065	0.0080	0.0100	0.0100				
Alloyed heat-treatable steels	≤ 32	≤ 301	70	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080				
	≤ 43	≤ 402	45	0.0010	0.0025	0.0040	0.0050	0.0065	0.0065				
Unalloyed case hardened steels	≤ 25	≤ 255	130	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125				
Alloyed case hardened steels	≤ 32	≤ 301	65	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080				
	≤ 43	≤ 402	45	0.0010	0.0025	0.0040	0.0050	0.0065	0.0065				
Nitriding steels	≤ 32	≤ 301	55	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080				
	≤ 43	≤ 402	45	0.0010	0.0025	0.0040	0.0050	0.0065	0.0065				
Tool steels	≤ 25	≤ 255	70	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080				
	≤ 43	≤ 402	40	0.0010	0.0025	0.0040	0.0050	0.0065	0.0065				
High speed steels	≤ 43	≤ 402	40	0.0010	0.0025	0.0040	0.0050	0.0065	0.0065				
Spring steels	≤ 38	≤ 354											
Hardened steels	≤ 48	≤ 460											
	≤ 66	-											
Stainless steels, sulphured	≤ 28	≤ 273	65	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080				
austenitic	≤ 36	≤ 337	45	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080				
martensitic	≤ 46	≤ 435	55	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080				
Cast iron	≤ 23	≤ 242	145	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125				
	≤ 38	≤ 354	115	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125				
Spheroidal graphite iron and malleable cast iron	≤ 23	≤ 242	130	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125				
	≤ 38	≤ 354	100	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125				
Chilled cast iron	≤ 38	≤ 354											
New cast materials GGV	≤ 20	≤ 220											
	≤ 32	≤ 301											
New cast materials ADI	≤ 32	≤ 301											
	≤ 43	≤ 402											
Special alloys	≤ 54	≤ 549											
Ti and Ti-alloys	≤ 25	≤ 255											
	≤ 43	≤ 402											
Aluminium and Al-alloys	-	≤ 120	225	0.0020	0.0065	0.0100	0.0125	0.0160	0.0160				
Al wrought alloys	-	≤ 200	225	0.0020	0.0065	0.0100	0.0125	0.0160	0.0160				
Al cast alloys ≤ 10 % Si	-	≤ 180	295	0.0020	0.0065	0.0100	0.0125	0.0160	0.0160				
≤ 24 % Si	-	≤ 180	260	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125				
Magnesium alloys	-	≤ 120	260	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125				
Copper, low-alloyed	-	≤ 150	100	0.0015	0.0040	0.0065	0.0080	0.0100	0.0100				
Brass, short-chipping	-	≤ 180	205	0.0015	0.0040	0.0065	0.0080	0.0100	0.0100				
long-chipping	-	≤ 180	130	0.0015	0.0040	0.0065	0.0080	0.0100	0.0100				
Bronze, short-chipping	-	≤ 180	160	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080				
	≤ 25	≤ 255	95	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080				
Bronze, long-chipping	≤ 25	≤ 255	130	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080				
	≤ 32	≤ 301	95	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080				
Duroplastics			80	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080				
Thermoplastics			80	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080				
Reinforced plastics - Kevlar													
Reinforced plastics - GFK / CFK													

Series # 5521

Material group	Hardness HRc	Hardness Bhn	SFM	Feed Rate - IPR 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	-	≤ 150	130	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125				
	≤ 32	≤ 301	100	0.0015	0.0040	0.0065	0.0080	0.0100	0.0100				
Free-cutting steels	≤ 25	≤ 255	155	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125				
	≤ 32	≤ 301	125	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125				
Unalloyed heat-treatable steels	≤ 20	≤ 220	100	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125				
	≤ 25	≤ 255	100	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125				
	≤ 32	≤ 301	80	0.0015	0.0040	0.0065	0.0080	0.0100	0.0100				
Alloyed heat-treatable steels	≤ 32	≤ 301	80	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080				
	≤ 43	≤ 402	80	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080				
Unalloyed case hardened steels	≤ 25	≤ 255	100	0.0010	0.0025	0.0040	0.0050	0.0065	0.0065				
Alloyed case hardened steels	≤ 32	≤ 301	60	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080				
	≤ 43	≤ 402	50	0.0010	0.0025	0.0040	0.0050	0.0065	0.0065				
Nitriding steels	≤ 32	≤ 301	45	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080				
	≤ 43	≤ 402	50	0.0010	0.0025	0.0040	0.0050	0.0065	0.0065				
Tool steels	≤ 25	≤ 255	60	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080				
	≤ 43	≤ 402	50	0.0010	0.0025	0.0040	0.0050	0.0065	0.0065				
High speed steels	≤ 43	≤ 402	50	0.0010	0.0025	0.0040	0.0050	0.0065	0.0065				
Spring steels	≤ 38	≤ 354	30	0.0007	0.0020	0.0030	0.0040	0.0050	0.0050				
Hardened steels	≤ 48	≤ 460											
	≤ 66	-											
Stainless steels, sulphured	≤ 28	≤ 273	50	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080				
austenitic	≤ 36	≤ 337	35	0.0010	0.0025	0.0040	0.0050	0.0065	0.0065				
martensitic	≤ 46	≤ 435	50	0.0010	0.0025	0.0040	0.0050	0.0065	0.0065				
Cast iron	≤ 23	≤ 242	115	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125				
	≤ 38	≤ 354	90	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125				
Spheroidal graphite iron and malleable cast iron	≤ 23	≤ 242	100	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125				
	≤ 38	≤ 354	80	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125				
Chilled cast iron	≤ 38	≤ 354											
New cast materials GGV	≤ 20	≤ 220											
	≤ 32	≤ 301											
New cast materials ADI	≤ 32	≤ 301											
	≤ 43	≤ 402											
Special alloys	≤ 54	≤ 549	30	0.0007	0.0020	0.0030	0.0040	0.0050	0.0050				
Ti and Ti-alloys	≤ 25	≤ 255											
	≤ 43	≤ 402											
Aluminium and Al-alloys	-	≤ 120											
Al wrought alloys	-	≤ 200											
Al cast alloys ≤ 10 % Si	-	≤ 180	230	0.0020	0.0065	0.0100	0.0125	0.0160	0.0160				
≤ 24 % Si	-	≤ 180	185	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125				
Magnesium alloys	-	≤ 120	205	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125				
Copper, low-alloyed	-	≤ 150											
Brass, short-chipping	-	≤ 180											
long-chipping	-	≤ 180											
Bronze, short-chipping	-	≤ 180											
	≤ 25	≤ 255											
Bronze, long-chipping	≤ 25	≤ 255											
	≤ 32	≤ 301											
Duroplastics													
Thermoplastics													
Reinforced plastics - Kevlar													
Reinforced plastics - GFK / CFK													