

Cutting Rate recommendations for form/fluteless taps

Thanks to the development of modern tool materials, geometries, coatings and recently the Guhring developed improved tool surface the scope of malleable materials able to be fluteless tapped is expanding. The table "Cutting rate recommendations" below provides an overview of materials that can be machined with Guhring's "Profile" fluteless

taps. In many cases, a test in harder or more brittle materials is worth while in order to benefit from the advantages of fluteless tapping in these materials. Please contact our technical specialists for advice.

Cutting rate recommendations

Material group		Approximate Rc	Approximate HB	Recommended SFM		
				HSS-E	HSS-E-PM	Solid carbide
● Structural steels, free-cutting steels			<180	45-70	60-90	90-120
	Unalloyed case hardened steels	<20	<230	40-65	55-80	75-100
	Unalloyed heat-treatable steels	<25	<250	30-55	50-75	65-95
● Structural steels, free-cutting steels		<20	<230	40-65	55-80	75-100
	Case hardened steels, heat-treatable steels	<25	<250	30-55	50-75	65-95
	Nitriding steels, spheroidal graphite iron	<30	<280	25-45	40-70	60-85
		<35	<320	20-35	35-60	50-75
		<38	<380	-	-	-
● Stainless- and acid-resistant steels, sulphured			<180	40-50	45-60	50-70
	austenitic	<25	<250	35-50	40-55	45-60
	martensitic	<30	<280	25-40	35-50	40-55
		<35	<320	-	25-40	30-45
● Alloyed case hardened steels		<25	<250	25-45	40-60	55-80
	Alloyed heat-treatable steels	<30	<280	20-40	35-55	50-70
	Alloyed tool steels	<35	<320	15-30	30-50	40-60
	High speed tool steels	<38	<380	-	-	-
		<44	<415	-	-	-
		<60		-	-	-
● Cast iron			<180	-	-	-
	Spheroidal graphite iron	<25	<250	40-65	60-80	75-130
	Malleable cast iron	<35	<320	40-65	60-80	75-130
● Aluminium and Al-alloys		SILICON CONTENT	WROUGHT ALUMINIUM			
	Al cast alloys	<10%	n/a	60-75	70-140	100-165
		>10%	n/a	-	-	-
	Al wrought alloys	n/a	30-80	80-100	100-150	150-200
		n/a	75-150	80-100	100-150	150-200
● Titanium and Ti-alloys			<320	7-26	7-26	20-35
			>320	-	-	-
● Nickel and Ni-alloys			<320	7-26	7-26	20-35
			>320	-	-	-
Plastics				-	-	-
Magnesium-alloys				-	-	-
● Brass, short-chipping			<180	35-50	50-65	75-100
	long-chipping		<180	40-65	60-80	80-120