

DRILLING CUTTING DATA

WIDIA RECOMMENDED DATA FOR TOPCUT PLUS DRILLS

DIN ISO 513	Work Material	Condition	Hardness HB	Material Group	Cutting Speeds in SFPM			Feed f (inches/rev) for Drill diameter D																					
					TN7015	TPC35	THM	D = .433" - .551" (11mm - 14mm)																					
								D = .571" - .709" (14.5mm - 18mm)	D = .748" - .945" (19mm - 24mm)	D = .984" - 1.339" (25mm - 34mm)																			
P	Unalloyed steel, cast steel and free cutting steel	< 0.25% C annealed	125	1	975	780	585	845	666	487	.0015	.002	.003	.004	.0015	.003	.004	.002	.0035	.005	.003	.005	.0055						
		≥ 0.25% C annealed	190	2	910	747	585	780	601	422	.002	.003	.004	.002	.003	.005	.002	.004	.0055	.003	.005	.0055	.003	.005	.0055				
		< 0.55% C hardened	250	3	910	715	520	715	552	390	.002	.003	.004	.002	.004	.0055	.003	.005	.007	.004	.006	.008	.004	.006	.008				
		≤ 0.55% C annealed	220	4	910	715	520	715	552	390	.002	.003	.004	.002	.004	.0055	.003	.005	.007	.004	.006	.008	.004	.006	.008				
		hardened	300	5	845	650	455	650	487	325	.0015	.002	.003	.002	.003	.005	.002	.004	.0055	.003	.005	.0055	.003	.005	.0055				
	Low alloy steel and cast steel	annealed	200	6	910	747	585	780	601	422	.002	.003	.004	.002	.004	.0055	.003	.005	.007	.004	.006	.008	.004	.006	.008				
		hardened	275	7	910	715	520	715	552	390	.002	.003	.004	.002	.004	.0055	.003	.005	.007	.004	.006	.008	.004	.006	.008				
			300	8	845	650	455	650	487	325	.0015	.002	.003	.002	.003	.005	.002	.004	.0055	.003	.005	.0055	.003	.005	.0055				
			350	9	780	585	390	585	422	260	.0015	.002	.003	.002	.003	.005	.002	.004	.0055	.003	.005	.0055	.003	.005	.0055				
			200	10	910	715	520	715	552	390	.002	.003	.004	.002	.004	.0055	.003	.005	.007	.004	.006	.008	.004	.006	.008				
			325	11	780	585	390	585	422	260	.002	.003	.004	.002	.003	.005	.002	.004	.0055	.003	.005	.0055	.003	.005	.0055				
M	400 Series Stainless steel and cast steel	ferritic / martensitic	200	12	845	650	455	650	487	325	.0015	.002	.003	.002	.003	.005	.002	.004	.0055	.003	.005	.0055	.003	.005	.0055				
		martensitic	240	13	780	617	455	585	422	260	.0015	.002	.003	.002	.003	.005	.002	.004	.0055	.003	.005	.0055	.003	.005	.0055				
	300 Series Stainless steel	austenitic	180	14	747	585	422	487	357	228	.0015	.002	.003	.002	.003	.005	.002	.004	.0055	.003	.005	.0055	.003	.005	.0055				
K	Work Material	Condition	Hardness HB	Material Group	Cutting Speeds in SFPM			Feed f (inches/rev) for Drill diameter D																					
					TN5515	TPC35	THM	D = .433" - .551" (11mm - 14mm)																					
								D = .571" - .709" (14.5mm - 18mm)	D = .748" - .945" (19mm - 24mm)	D = .984" - 1.339" (25mm - 34mm)																			
					Grey cast iron	ferritic/pearlitic	180	15	845	650	455				520	390	260	.003	.0035	.004	.003	.004	.0055	.004	.006	.008	.004	.006	.0085
						pearlitic	260	16	747	568	390				422	308	195	.0025	.003	.004	.003	.004	.0055	.004	.006	.008	.004	.006	.0085
					Nodular cast iron	ferritic	160	17	812	617	422	650	487	325	520	390	260	.0025	.003	.004	.003	.004	.0055	.004	.006	.008	.004	.006	.0085
						pearlitic	250	18	747	568	390	585	422	260	422	308	195	.0025	.003	.004	.003	.004	.0055	.004	.006	.008	.004	.006	.0085
					Malleable cast iron	ferritic	130	19	812	617	422	715	552	390	585	438	293	.0025	.003	.004	.003	.004	.0055	.004	.006	.008	.004	.006	.008
						pearlitic	230	20	682	520	357	650	487	325	520	390	260	.0025	.003	.004	.003	.004	.0055	.004	.006	.008	.004	.006	.008
					Aluminum alloys wrought	non-age-hardenable	60	21							1625	1218	813	.0025	.004	.005	.0025	.004	.0055	.003	.005	.007	.004	.006	.0085
						age-hardenable	100	22							1625	1218	813	.0025	.004	.005	.0025	.004	.0055	.003	.005	.007	.004	.006	.0085
					Cast aluminum alloys	≤ 12% Si	75	23							1462	1056	650	.0025	.004	.005	.0025	.004	.0055	.003	.005	.007	.004	.006	.0085
						> 12% Si	90	24							1462	1056	650	.0025	.004	.005	.0025	.004	.0055	.003	.005	.007	.004	.006	.0085
					Copper & copper alloys	lead alloy	130	25							1040	764	488	.0025	.004	.005	.0025	.004	.0055	.003	.005	.007	.004	.006	.0085
						Brass, red brass	110	26							487	374	260	.0025	.004	.005	.003	.004	.0055	.004	.006	.008	.005	.006	.0095
							90	27							487	374	260	.0025	.004	.005	.003	.004	.0055	.004	.006	.008	.005	.006	.0095
						Bronze, electrolytic-Cu	100	28							455	325	195	.0025	.004	.005	.003	.004	.0055	.004	.006	.008	.005	.006	.0095