

EL454 Series Cutting Data

4 Flute Carbide Long Length End Mill Cutting Data

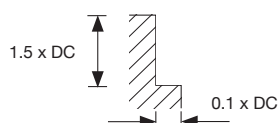


STÄRKE

eco
MILL

The feed rate for long, long reach and uncoated tools should be reduced by up to 50%

EL454 SERIES															
VDI Material Group			HRc	Side Cutting	Size (mm)										
					2.0	3.0	4.0	5.0	6.0	8.0	10.0	12.0	14.0	16.0	20.0
P	1-5	Non-Alloy Steel	<25	v _c (m/min)	60	70	80	85	90	90	85	90	90	95	90
				n	9550	7425	6365	5410	4775	3580	2705	2385	2045	1890	1430
				f _z	0.006	0.009	0.019	0.024	0.03	0.042	0.047	0.047	0.047	0.048	0.047
				f (mm/min)	170	200	360	390	430	450	380	335	290	270	200
	6-9	Low-Alloy Steel	25-35	v _c (m/min)	60	70	80	85	90	90	85	90	90	95	90
				n	9550	7425	6365	5410	4775	3580	2705	2385	2045	1890	1430
				f _z	0.006	0.009	0.019	0.024	0.03	0.042	0.047	0.047	0.047	0.048	0.047
				f (mm/min)	170	200	360	390	430	450	380	335	290	270	200
M	12-13	Ferritic/ Martensitic Stainless Steel		v _c (m/min)	35	35	40	40	45	45	45	45	45	45	45
				n	5570	3715	3180	2545	2385	1790	1430	1195	1020	895	715
				f _z	0.006	0.009	0.018	0.027	0.03	0.042	0.045	0.045	0.044	0.048	0.048
				f (mm/min)	100	100	170	180	215	225	190	160	135	130	105
K	15-20	Cast Iron		v _c (m/min)	60	55	60	55	55	55	60	55	55	55	55
				n	9550	5835	4775	3500	2920	2190	1910	1460	1250	1095	875
				f _z	0.017	0.026	0.035	0.044	0.064	0.093	0.115	0.154	0.181	0.22	0.285
				f (mm/min)	485	455	500	460	560	610	660	675	680	720	750
N	21-24	Aluminium/ Aluminium Alloys		v _c (m/min)	140	145	140	145	145	145	145	140	145	145	140
				n	22280	15385	11140	9230	7690	5770	4615	3715	3295	2885	2230
				f _z	0.016	0.021	0.031	0.037	0.048	0.064	0.08	0.098	0.444	0.129	0.167
				f (mm/min)	1070	970	1035	1025	1110	1105	1105	1090	1100	1115	1115
	26-27	Copper/ Copper Alloys		v _c (m/min)	105	105	110	105	105	110	105	105	105	110	105
				n	16710	11140	8755	6685	5570	4375	3340	2785	2385	2190	1670
				f _z	0.016	0.023	0.029	0.037	0.048	0.063	0.081	0.096	0.115	0.125	0.162
				f (mm/min)	800	770	760	740	800	825	810	800	825	820	810



All recommendations are based on ideal machining conditions.

Adjustments may need to be made according to your set-up.

The recommendations for speeds, feeds and other parameters presented in this chart are nominal recommendations and should be considered only as good starting points.

- v_c - cutting speed (m/min)
- n - RPM (rev/min)
- f_z - feed per tooth (mm)
- f - feed rate (mm/min)
- z - No. of Teeth
- a_p - axial depth of cut
- a_e - radial depth of cut

$$\text{To calculate RPM from cutting speed: } n = \frac{v_c \cdot 1000}{\pi \cdot \phi}$$

$$\text{To calculate cutting speed from RPM: } v_c = \frac{n \cdot \pi \cdot \phi}{1000}$$