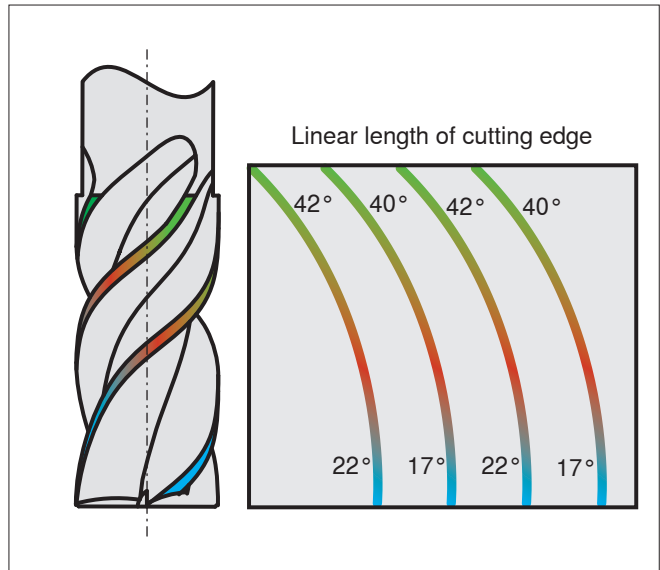
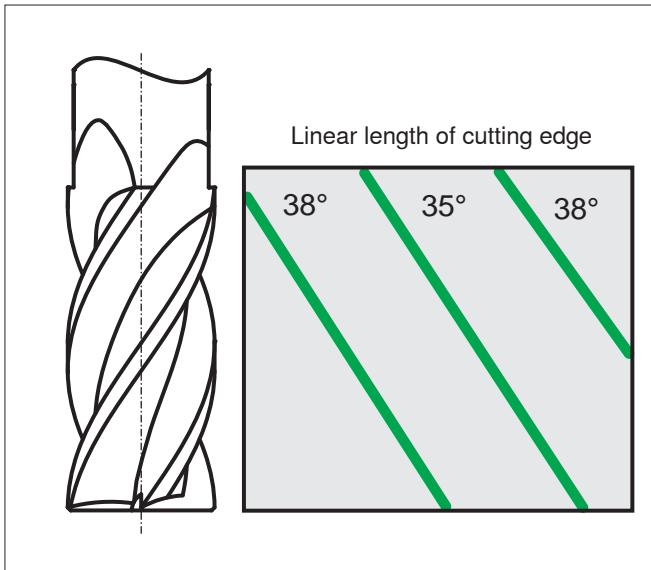


The following illustration compares a HPC cutter with irregular pitch to a HPC2 end mill additionally characterised by a variable helix angle and core diameter. It shows the 'linear' length of the cutting edge or length of the helical flutes of the tools. This

points out the difference of the variable helix angle of a HPC2 W4420 end mill when compared with a solid carbide milling cutter commonly used on the market, one that has a constant helix angle over the entire length of the groove.

### Tool with irregular pitch

### HPC2 tool with irregular pitch and variable helix angle



### Resulting forces

Compared to competitor tools, the HPC2 tool exhibits notably lower forces generated by the tool (see chart). Improvements in tool life of up to 45% are achieved when the cutting forces

are equal.

Material: non alloyed steel, annealed  
1.2379 X155 Cr V Mo 121

	Competitor	CERATIZIT
Cutter Ø [mm]	10	10
$a_e$ [mm]	10	10
$a_p$ [mm]	10 (1xD)	10 (1xD)
$V_c$ [m/min]	160	160
$n$ [min <sup>-1</sup> ]	5093	5093
$f_z$ [mm]	0,05	0,05
$V_f$ [mm/min]	1019	1019
Tool life [m]	7,8	11,3

