

Calculation Examples

Average Wall Angle	ap/D						
	0.003	0.006	0.010	0.016	0.020	0.025	0.030
0.0°	9.1	6.5	5.0	4.0	3.6	3.2	2.9
3.0°	6.2	4.9	4.0	3.3	3.0	2.8	2.6
5.0°	5.1	4.2	3.5	3.0	2.8	2.5	2.4
8.0°	4.1	3.4	3.0	2.6	2.4	2.3	2.1
10.0°	3.6	3.1	2.7	2.4	2.3	2.1	2.0
15.0°	2.8	2.5	2.2	2.0	1.9	1.8	1.7
20.0°	2.3	2.1	1.9	1.8	1.7	1.6	1.6
30.0°	1.7	1.6	1.5	1.4	1.4	1.3	1.3
40.0°	1.4	1.3	1.3	1.2	1.2	1.2	1.2
50.0°	1.2	1.2	1.1	1.1	1.1	1.1	1.1
55.0°	1.1	1.1	1.1	1.1	1.1	1.0	1.0

For calculating real cutting speed, use formula: Basic cutting speed * Factor

Choose the coefficient according to the ap/D and average wall angle.

Example 1:

For Tool = 10mm and ap = 0,2mm for average wall angle 0°, ap/D ratio equal 0,2/10 = 0,02. Factor equal 3.6.

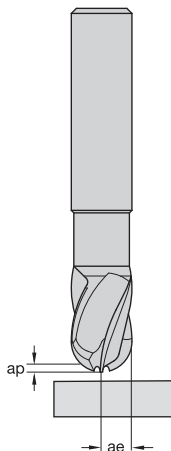
Example 2:

For Tool = 8mm and ap = 0,1mm for average wall angle 10°, ap/D ratio equal 0,1/8 = 0,0125. Factor will be between 2.7 and 2.4, choose 2.6.

Keep in mind shank diameter and length effect.

If tool length out of the chuck is more than 2 x D, please decrease feed per tooth by 15% each 1 x D.

Material Group	TiAlN or AlTiN Basic Cutting Speed Vc m/min		
	min		max
P3	160	-	180
P4	140	-	160
H1	100	-	140
H2	70	-	120
H3	60	-	90
H4	50	-	70

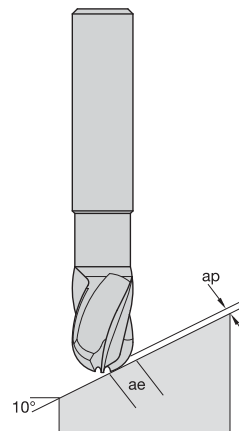


Application example #1 =
face milling a flat surface

- D = 10mm
- ap = 0,2mm
- Average wall angle = 0°
- Finishing H2
- Starting vc from chart = 100
- ap/D = 0.02
- Factor from table =

3.6

vc to programme into machine = 100 * 3.6 = 360 m/min
RPM = 360 * 1000 / 3.14 / 10 = 11460 RPM



Application example #2 =
face milling a 10° average wall angle

- D = 8mm
- ap = 0,1mm
- Average wall angle = 10°
- Finishing H2
- Starting vc from chart = 100
- ap/D = 0,1/8 = 0,0125
- Factor from table =

2.6

vc to programme into machine = 100 * 2.6 = 260 m/min
RPM = 260 * 1000 / 3.14 / 10 = 7640 RPM