



Simplified formulas to evaluate h_m and f_z based on axial depth of cut or radial engagement.

Calculation of the average chip thickness in relation with the D.O.C. (Axial)

Formula: Programme Feed Rate (f_z)

$$f_z = h_m \times \sqrt{\frac{d}{a_p}}$$

h_m = Average chip thickness

a_p = Depth of cut

f_z = Feed per tooth

d = Insert diameter

Formula: Average Chip Thickness (h_m)

$$h_m = f_z \times \sqrt{\frac{a_p}{d}}$$

Calculation of the average chip thickness in relation with the a_e (Radial Engagement) if a_e is less than 50% of dia.

Formula: Programme Feed Rate (f_z)

$$f_z = h_m \times \sqrt{\frac{d}{a_e}}$$

h_m = Average chip thickness

a_e = Radial engagement

f_z = Feed per tooth

d = Cutter diameter

Formula: Average Chip Thickness (h_m)

$$h_m = f_z \times \sqrt{\frac{a_e}{d}}$$

With round inserts, the thickness of the chip varies depending on the axial depth of cut (a_p) and is related to the size of the cutting edge-preparation. For best tool life it is important to maintain the proper chip thickness as shown below. This chart calculates in relation with axial depth of cut (a_p) only and not radial cut (a_e).

RP..1606.. Insert

Insert	Insert size (mm)	a_p d.o.c. (mm)	h_m (mm)		f_z (mm/z)	
			min.	max.	min.	max.
RPMT1606M0E-41	16	2,00	0,05	0,20	0,14	0,56
	16	3,00	0,05	0,20	0,12	0,46
	16	4,00	0,05	0,20	0,11	0,40
	16	5,00	0,05	0,20	0,09	0,36
	16	6,00	0,05	0,20	0,08	0,33
	16	8,00	0,05	0,20	0,07	0,28
RPHT1606M0S	16	4,00	0,15	0,28	0,30	0,56
	16	5,00	0,15	0,28	0,27	0,50
	16	6,00	0,15	0,28	0,24	0,46
	16	8,00	0,15	0,28	0,21	0,40
RPHT1606M0T	16	2,00	0,10	0,25	0,28	0,71
	16	3,00	0,10	0,25	0,23	0,58
	16	4,00	0,10	0,25	0,20	0,50
	16	5,00	0,10	0,25	0,18	0,45
	16	6,00	0,10	0,25	0,16	0,41
	16	8,00	0,10	0,25	0,14	0,35